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Saier's GARDEN MAGAZINE

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A MANUAL OF RARE FLOWERS, THEIR SELECTION AND CULTURE

Vol. 3, No. 7.

June, 1954.

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CONTINUED FROM PAGE 384.

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(Continued on Back Cover)...

Passion Fruits and Passion Flowers

Although several hundred different species and varieties of Passion vines are known to botanists throughout the world, and some have been cultivated for ornamental purposes for many years, comparatively few have received much attention as a commercial fruit.

The best known, and only commercial species in Victoria is *Passiflora edulis*—the purple or black passion fruit. Banana passion fruit, once classified under "Tacsonia", is grown in some home gardens, often fruiting better in cool climates. A similar species producing larger fruits has been reported in Victoria.

In recent years, attempts have been made to improve the life and vigor of the purple passion by grafting onto other stocks. Banana-passion stocks having proved unsatisfactory, many plants are now appearing of *P. caerulea* which appear to be a big improvement. Several strains of purple passion have been developed, including "Norfolk Island", which is favored by some commercial growers.

Among other *Passifloras* reported to produce more or less palatable fruit are: Mottled Passion (*P. ligularis*), Bell Apple (*P. incarnata*), Sweet Calabash (*P. maliformis*), Malcolm's Passion (*P. alata*), Golden Passion (*P. edulis* var. *flavicarpa*), Granadilla (*P. quadrangularis*), Large Granadilla (*P. macrocarpa*), a number of varieties and hybrids of the foregoing, and some others of the banana-fruited (*Tacsonia*) types. A green-fruited variety of good flavor has also been reported from Tweed Heads, N. S. W.

Several of the foregoing species and varieties have been cultivated in North Queensland for a number of years. In an article by S. E. Stephens in the Queensland Agricultural Journal, Oct. 1952, mention is made of the greater vigor and hardiness under tropical conditions of the Golden variety, and the uncertainty of fruit setting in all *passifloraceous* fruits in the wet tropical zone unless hand-pollination is practised.

There are many other more or less ornamental *Passifloras* such as: *manicata*, *mortii*, *caerulea*, *Empress Eugenie*, *Constance Elliott*, *Eynsford Gem*, *vitifolia*, *xoniensis* and *sanguinolenta*. The exact botanical stand-

C. L. Wheeler, Victoria, Australia.

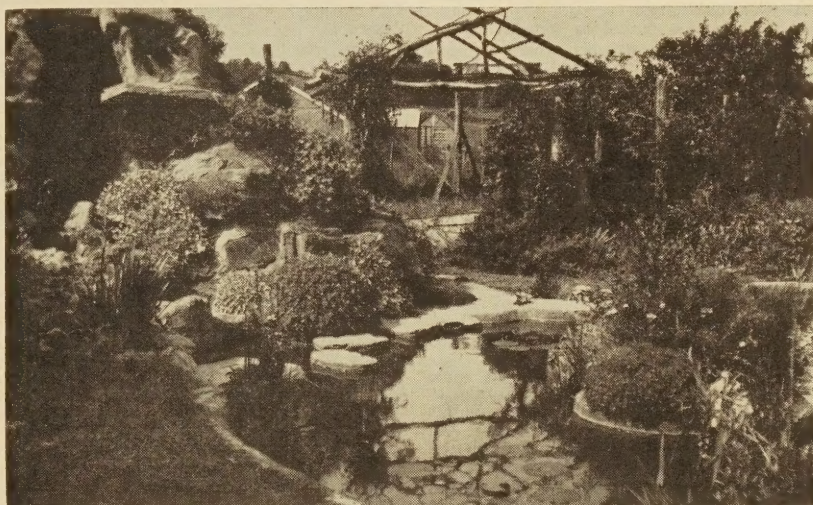
ing of some is however somewhat confused.

Although the fruits of most species are reported to be edible, if not altogether palatable, the fruit of *P. suberosa* is said to be poisonous. This species is growing wild in parts of Queensland and produces dark purple fruits about the size of currants. Several other species have become a pest in cultivation and are regarded as weeds.

Under the cold winter conditions in southern Victoria most of the tropical species on their own roots die out, but the writer has been able to carry plants of some species over several winters by grafting onto more cold-resistant stocks and planting in favorable positions in the garden. Flowers have not yet appeared, although growth in some cases has been vigorous. A climate similar to northern Victoria or New South Wales, may produce better results if protection from frosts can be afforded.

Several years ago, seeds of a yellow fruited variety were sold in Melbourne under the name of "Orange Passionfruit", and plants raised from these seeds bore a strong resemblance to the common purple. At somewhere about the same time, a plant was reported growing in a Melbourne garden under the name of "Golden Wonder", and producing yellow fruit about the size of a grapefruit. In the opinion of the writer, both of these were the Golden Passionfruit (*P. edulis* var. *flavicarpa*).

The germination of many *Passiflora* seeds is often irregular and seedlings appear many months after sowing. Immersion of seed in warm water sometimes helps, and if after hope has been abandoned, the seed box is resown with other seeds, the possibility of delayed germination is preserved. Owing to the extreme scarcity of seeds of many species and varieties, plants of many are seldom available from the large nurseries.



Another View of Mrs. Deighton's Garden Showing Rockery and Pool.

Chemicalization of Our Foods

Among the many reasons for having your own garden where you can produce part of your vegetables and fruits, is the ever increasing use of chemicals in foods. The following is part of an article in *Organic Gardening*.

"Our drinking water has chlorine in it and in a recent issue of the *Journal of the American Medical Association*, it was admitted that no tests had even been made to test the effect of chlorine on either man or animal. And in this connection, no organic gardener would ever use chlorinated water to sprinkle on his soil. In many municipal systems alum and sulphur dioxide are used along with the chlorine—with what effect no one can tell.

Cider contains benzoate of soda and poisonous phosphates are used in the manufacture of soft drinks. France is, by the way, far ahead of us on this, for in that country, the use of benzoate of soda is against the law. Ice cream and peanut butter are saturated with polyoxymethylene-monostearate in order to give them better texture, and so are candy and salad dressings. That chaste looking, ready-whipped cream is produced by the formation of foam with nitrous oxide. Frankfurters and canned meats are preserved

with sodium nitrate—a chemical fertilizer which damages the hemoglobin of the blood. Even ordinary table salt has two chemicals in it to permit it to pour more easily. Tomatoes have chemicals added to prevent softening and pickles are made with alum to keep them firm and full-bodied. One of our famous American soft drinks contains a chemical that is bad for the eyes. Canned fruits and vegetables are peeled by the use of lye, and pretzels are given that nice sheen by putting them through a bath of caustic soda.

Yet, these are but a few of the ways countless chemicals are finding their way into foods. Coloring agents, preservatives, spoilage retarders and a host of other additives, conditioners, extenders and so forth are becoming more present in what we offer our bodies for "natural," wholesome nutrition!

New developments in packaging, non-refrigerated "freshness retaining" methods, plastic dishware and utensils, and cyanide-containing silver polishes all add further food contact with chemicals, further intake of potential toxins. Often the contention is made that the amounts of anything possibly harmful are extremely small in any given item of food. Perhaps true—but what of the over-all diet, what of the constant con-

sumption of dozens of food items, each containing these even small amounts? Furthermore, what of the day-by-day cumulative effects on body organs, disease resistance and general health? Many of the poisons involved in recent experimentation have been shown to be, at least in part, held and built up in the body over long periods of time. And finally, what of the hazards of these tainted foods to those already lacking perfect health, to the sick, the aged, the infant population?"

This is by no means an indictment of food manufacturers. By far, most of them want no part of adding to the detrimental chemicalization of our foods.

In a recent issue of *The Readers Digest*, there appeared an article comparing butter and oleo; they apparently assumed that every point of difference was considered, but such was not the case for they failed to mention benzoate of soda, the one reason for not eating oleomargine.

CHERIMOYA DELICIOSA

A very choice fruit, tropical, flavor of banana and pineapple. It is also ornamental and grown in the South.

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The Hybrids of *Amaryllis belladonna* and its Allies

By L. S. Hannibal, California

(Reprinted from the February bulletin of the Bulb Society)

The *Amaryllis belladonna* major of our gardens is not a typical representative of this well known Cape bulb as it grows in its natural state. Bulbs received some years ago from Stellenbosch throw only 7 or 8 blossoms to an umbel, are far from free flowering, and produce relatively small seed having practically no albuminous material. Apparently our garden forms such as major or pallida, are distinctive clones selected under adverse growing conditions where they were found hardy and easy to flower. From the standpoint of breeding these clones have not had much to offer, even after 240 years of known cultivation in England. The outstanding breeding results have shown up in less homozygous stock or by using hybrid material such as the Australian *Amaryllis multiflora*.

Amaryllis multiflora hybrids

The *A. multiflora* hybrids, which are now listed by several Southern California growers, date back to crossings made in 1841 by one J. C. Bidwell, who was director of the Botanical gardens of Sidney at that time. Evidence discloses that he crossed *Brunsvigia grandiflora* var. *Banksiana* on an unknown clone of *Amaryllis belladonna*. The true value of his hybrid was not recognized until a white seedling appeared in a planting of bulbs at the McArthur estate in Camden, Australia, about 1860. The attractive white clone, which is still in the trade, was named *A. multiflora alba* or *Baptisti alba*. From this start a number of whites were developed, with the white "Hathor" of Bradley's being considered one of the best.

Mrs. Bullard apparently imported some of the Australian bulbs into California about 1918. Mr. Orpet used some of this white stock in his early breeding, thus the origin of the Orpet White. Later, with the assistance of Mr. Dickinson of Las Positas, Mr. Orpet brought in more of the whites, including 'Hathor'. As a result, both the whites and colored *Multifloras* are well established about Santa Barbara, Calif. It was about 12 years ago that the writer noted that the white seed from the *Multifloras* tended to produce pigment-free plants that flowered with white blossoms. As a result both Mr. Orpet and the writer have had unusual luck in building up a supply of white stock by segregating seed. However, the writer has been more concerned in obtaining free-flowering hardy whites more of the *A. belladonna* type. Such should eventually appear on the show bench as this goal has been attained.

The Parkeri Hybrids

The Parkeri hybrids from Kew have been accepted as distinct for a number of years by the British. When a white Parkeri flower was promptly recognized as identical for the writer with *A. multiflora alba*. Since then, close comparison and cross-breeding of colored Parkeri and *Multiflora rosea* have shown conclusively that the plants are of the same hybrid origin. The earlier use of the name of *A. multiflora* gives this name nomenclatural precedence over Parkeri, but the designation of 'Multiflora' for the hybrids should not mislead one to assume that *Brunsvigia orientalis* (Syn. *B. gigantea* or *B. multiflora*) was a parent. Unfortunately this confusion of names will be with us for years to come.

The Van Tubergen's *Brunsdonna* hybrids, which are *B. Josephine*, pollinated by *A. belladonna*, can be considered a second hybrid type. Apparently the late flowering *A. belladonna pallida* clone (sometimes called Minor) furnished the pollen, as the typical narrow foliage shows up in many of the

seedlings. The *A. multiflora* hybrids and *Brunsdonna* either do not cross easily or are incompatible, as true crosses are not attainable. Seemingly the *B. grandiflora* genes in *A. multiflora* are reluctant to pair with *B. Josephine* genes. This is unfortunate as some interesting tri-species hybrids should be obtainable.

In England, a *Nerine* has been pollenated by *A. belladonna*. The hybrid is known pollinating *A. belladonna* with *Crinum* pollen and seed. Attempts to repeat the cross here have not been successful thus far. Apparently only certain *Nerines* will respond to *Amaryllis* pollen. The hybrid has wide possibilities.

The *Crinodonna* or *Amarcrinum* Crosses

The *Crinodonna* or *Amarcrinum* crosses (sterile hybrids) which are obtained by ipolinating *A. belladonna* with *Crinum* Moorei should be well known in Southern California. A wide variety of hybrids is possible, depending upon the combination of *A. belladonna* or *C. Moorei* clones used. Arno Bowers in San Marino had some 20 variations, with a large white selected for further propagation. The writer has a miniature red known as "Dorothy Hannibal" which is suitable for a 6-inch pot. The possibility of other *Amarcrinums* should be mentioned. From past experience (mostly failures), the writer knows that *C. bulbispermum* and some of the hybrid *Crinums* will cross with *A. belladonna*, and that crosses can be effected on some of the *A. multifloras*. The latter crosses are tri-generic, having 50% *Crinum* genes, and the remaining *Brunsvigia grandiflora* and *A. belladonna* genes. Growth of a few of these hybrid seeds has been achieved by planting them on a layer of clean sand, which is a good way to avoid troublesome decay with delicate seed. If the hybrids rich in *Brunsvigia* genes amount to anything, they are probably entitled to a new name, "*Crinobrunsdonna*" being suggested.

Crinum Crosses on *Brunsvigia*

Crinum crosses on *Brunsvigia appendiculata* have been attempted without results, and attempts to cross *Nerines* with several *Brunsvigiias* have been attempted without any indications of hybrids being detected in the seed. These "*Brunsvigia-nerine*" crosses should not be too difficult and should produce interesting plants. The *Brunsvigiias* usually throw 50 to 60 blossoms, and if these were as vivid as some of the *Nerines*, the plants would be as striking as *Ammocharis coranica* var. *coccinea*, which some few of us have seen in flower. The writer is particularly partial to breeding with *B. appendiculata* as it has been found to be extremely hardy to cold, and flowers easily. It is the only *amaryllid* to grow naturally in the writer's garden from volunteer seed—this is in the foothills of the Sierras east of Sacramento, not in the balmy winterland of Southern California.

Seed of *Amaryllis belladonna*, *A. multiflora*, *Nerines*, *Amarcrinum*, *Brunsvigia* and the like should be started on damp sand. The writer uses deep flats filled with loam containing some ground limestone or oyster shell. A quarter inch of sand is spread over the loam, and the seed are scattered on the sand. A sheet of glass over the flat maintains moisture to suit. This procedure eliminates decay of tender seed before they become established.

Breeding *amaryllids* of the type enumerated gives many strange results. Parthenogenesis development of seed is very common and seed which one may innocently accept of hybrid may be purely a maternal type yielding seedlings quite like the female parent. Such seed usually occur in wide crosses, but it can also develop where intra-specific incompatibilities exist. If one has an outstanding clone, say a select *Nerine*, that

needs to be increased many fold the germination of 500 or more parthenogenetic seed from one or two umbels will easily out-produce 20 or 30 years of straight vegetative multiplication. Seed of *Nerine* may flower in three or four years from planting, but the *A. multifloras* and *Brunsvigiias* may take 7 to 12 years. This is no hobby for the impatient amateur.

JAPANESE IPOMOEAS IN POTS

Arthur E. Thatcher of Hulls Cove, Me., writes about these large flowering Morning Glories being grown in 5-inch pots.

They are climbers but not tall ones; they are especially good for pot culture and of course will not stand winds and adverse weather conditions as will the common kinds like Heavenly Blue, etc. I hope none of our readers have planted them where they will be whipped by the winds or beaten down by hard rains; six inch flowers naturally want stand much of this treatment. Why not write us how you grew these Morning Glories and your opinion of them? They are very popular.

Mr. Thatcher remarks: 'I must congratulate you on your excellent seed list which contains an abundance of good things.' We hope many feel the same way; in revised issues, very much additional cultural information is being added; this all takes time but you will find much additional information in every issue.

Champion Tomato Crop

In a recent issue of one of the Market Gardener Magazines there appeared an article on the champion tomato grower and the award of a \$100 Saving Bond.

Here is what went into an acre of soil to produce this bumper crop!

400 lbs of 5-10-10 fertilizer at planting time; 800 lbs of the same fertilizer 2 weeks later; 900 lbs a month later; then every 7-10 days 100 gallons of a Dithane-Rothane spray was applied and this was increased to 150 gallons during the later part of the season; at picking time 60 lbs. of anhydrous was applied per acre!

Now, this program certainly produced the tomatoes but what about the soil? What treatment will be given it next year and what sort of bacterial life remains? Even with hybrid corn the kernels are so hard that our young pigs cannot eat it, it must be ground!

Some crates of this same corn was placed so that rats or mice could get to it and all that they ate was the germ; the balance was given to some sows and after three days they even refused to eat it! Of course, when this corn is ground up and flavored with something to fool the pigs they will eat it but never the less it is the same food that they refused to eat before hand! Grow your own garden vegetables and know what you are eating.

SANGUINARIA CANADENSIS

Unlike many double forms, the double *Sanguinaria* is an improvement on the type and its flowers are less fugacious. It was first discovered in a woods near Ann Arbor, Michigan. It makes a dandy pot plant and succeeds in shady woodland locations.

When plants have been established it can be increased by division of the rhizomes after the leaves have died down.

LITHOSPERMUM GASTONII

This is a rare native of the Pyrenees, a neat erect shrubby plant with leafy stems about 12 inches high. The leaves are an attractive dark green and the flowers are a nice blue with a white eye, borne on leafy cymes.

It likes a sunny position in a calcareous loam; flowers in July. After once established it is very hardy. It is not hard to grow from seed.

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DIMONDALE, MICHIGAN.

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SCOTCH TAPE AND CURRENCY

Quite often we receive currency in the mail and for some reason the sender usually attaches it to the letter by Scotch tape! Now, there seems to be just enough real Scotch in this tape that it won't let go of the currency without keeping a little of it. Do not Scotch-tape currency to your letter if you want us to have all of it!

NEXT SEED CATALOG

The last seed catalog was printed in February. A revised issue is now being made; there are several hundred additional seeds to be added to this issue; many new cultural directions and many other improvements, including the new Zone Map. The catalog will be mailed free to all subscribers and this year's customers; any one else wanting a copy should write for it.

HOW DO THEY FIGURE MAIL RATES?

Mrs. O. D. Miller of Tacoma, Washington who is librarian for her Garden Club wrote in for 16 copies of the seed catalog.

If we had put the 16 catalogs in ONE package the postage would have been \$1.59, but if we mail 16 different packages or if she had given us the addresses of the members to whom the catalogs were to go, and each one to a different address, whether to Alaska, Australia, China or Japan, the postage on the entire 16 catalogs would be \$1.04!

I wonder if Mrs. Miller that we were crazy when 16 separate copies arrived? Just how politicians in Washington can figure such foolish rates cannot be explained but the people elect them year after year!

OR DID THEY? It is more likely that the voter soon forgets for in reality he only votes to legalize the candidate! In the last national election, Michigan went to the great expense of a primary election where the people voted to nominate Senator Taft for the nomination for the Presidency. The delegates should have remained for Mr. Taft until he released them; however this was not what was done! In some way the present Postmaster General swung these delegates to Eisenhower regardless of the primary of the people of Michigan; whether he got the Cabbit post for this work or not, he is the Postmaster General! A great many people voted AGAINST Trueman and not for anyone a fact the Republicans may realize in the next elections!

THE HERMITAGE

Mrs. Arthur Gibson of Laurel, Ontario, writes: "Was glad to see the pictures of The Hermitage at Nashville, Tennessee; we have been down there, I, twice, and my husband three times. I would dearly love to go down again this year; we have friends in Nashville and Franklin, Tenn.

Note: I am glad to know that there are readers in Canada better acquainted with The Hermitage than the post office at Nashville. We mailed a bundle of magazines, addressed to "The Hermitage, Nashville, Tenn", the package was RETURNED for "better address" with the notation, "The Hermitage Hotel, Hermitage Apt., Hermitage Garage" and last, "The Shrine"! A lot of postage wasted.

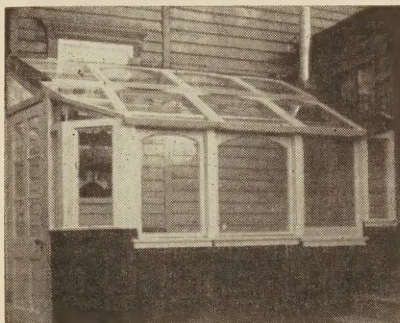
Growing Dahlias from Seed Intreisting

By Miss Eleanor J. Kilroy, N. Y.

If you are the kind of gardener who likes to go out to your flower beds and find a surprise from day to day, try growing Dahlias from seed.

Several years ago a friend of mine gave me five miniature Dahlia seedlings that she had started indoors, first in an ordinary clay pot for seed starting and as the plants grew, she transferred them to flats.

I took my five seedlings home, and knowing that Dahlias are heavy feeders, spaded up the ground making sure I went deeper than where the plant's roots would be when I set them out. I always put some peat moss, a bit of bone meal and some 5-10-5 fertilizer in the 'holes' where the plant is to



Mrs. Kilroy's Little Greenhouse.

go, being sure that some soil is between the food and the plant roots. When I put the plants in, they are placed in the hole, then the hole is filled with water—usually containing some B-1. When the water drains away, I fill the cavity with soil, leaving a saucer-like formation on the top of the soil to hold future waterings. The Dahlias with the largest flowers were given stakes to hold them as they grew.

Then, I watered and waited. When the plants formed buds my curiosity was unlimited and those Dahlias were certainly watched, morning, noon and night! The first bud opened semi-double and a Poinsetta-red, it actually reminded me of a Poinsetta with its yellow pollen center and red petals. Then came a second plant to flower. This time a daisy-like single with orchid petals in whose centers was a purple dot. The third plant to bloom had white flowers similar to the red one; the fourth had a yellow semi-double flower and the fifth and last had a single rose colored flower that seemed to be dusted with gold.

That summer was a dry one, so I did have to give the Dahlias a drink most every night, but certainly I was more than well rewarded—five plants, five different colored flowers! When fall came and after the first frost, I dug up my 'toes' and again I was surprised at the number and size of them.

So, if you like surprises in your garden, try raising Dahlias from seed. Best results are obtained from indoor started seeds, but the seeds can be planted directly in the soil in climates that have a long summer and late fall. Or, perhaps, you may be able to purchase some started plants from a nursery or Dahlia grower.

FOLIAGE VALUE IN IRIS

Too often Iris are selected on their flowers alone. The foliage effect is equally of value. Many 'top' Iris have a very poor foliage or a poor green color and this is especially noticeable when the plants are near a walk.

A good foliage should have a good green color, the leaves should be erect and nicely shaped; not too narrow or too wide for the particular type plant. In the lower growing types such as the pumilas and

chamaeiris, the foliage is of special value because these make nice plants in the rockery or close to walks and if the foliage is attractive all thru the year, the variety is of special value.

The height of the flower should also be considered. The higher the flower the more liable it is to be damaged by a heavy wind and rain storm. These varieties should always be planted in a sheltered place so that at least a strong wind cannot blow them to the ground when in full flower.

SAW DUST AS A FERTILIZER

Eventually all kinds of saw dust make good fertilizer—organic fertilizer—but one must keep in mind that the decay of woody material and even coarse straw, requires considerable nitrogen in the process and this results in nitrogen starvation for any plants growing on this soil. It is this very reason that seedlings placed in soft wood plant bands need additional nitrogen while they are surrounded by the band; the cypress plant band does not decay while the plant is in it and thus is a much better band for growing-on perennials, etc.,

However, in the field with field crops one might not notice the nitrogen shortage as he would in a flat where actually he can see his plants. Heavy applications of saw dust as a mulch, where it will not be disturbed most likely will do no harm but the grower should keep a careful watch and if the plants show any nitrogen starvation, it should be quickly corrected by an application of nitrate of soda. Hard wood saw dust will be safer to use than soft wood and again, saw dust from trees with gums may be actually bad in the garden.

DEEP PLANTING OF TULIPS

Ordinarily, Tulips are planted from four to six inches deep and while this is a good recommendation for the average planter, it can be improved upon.

Shallow planted bulbs break up quickly into small bulbs and where multiplying is the object, this is the proper method but when practiced in your flower beds, it often makes it necessary to replant every three or four years.

Bulbs planted from ten to twelve inches deep do not break up and excellent beds have been possible for up towards twenty years. To do this it is very important to have perfect drainage and that no water stands around the bulbs, especially during the winter. In the case of clay soils it may be necessary to remake the bed and mixing in sand, even providing tile drainage.

The common Tulips will not do well in a hot climate and for this reason, it is a common practice to replant every year in the South; but if planted deep and proper drainage provided, there is no reason for costly annual plantings.

This does not hold, of course, for some of the species or botanical Tulips that are native of hot districts in Asia Minor.

TULIP—PRINCESS ELIZABETH

Of all the Tulips we grew this year, none equalled the above beautiful variety. It stood up straight and even, with perfectly formed flowers, in a most beautiful shade of pink. A bed of several hundred would certainly make a beautiful sight. And just this week we note an article on recommended varieties of Tulips in one of the national magazines, that did not even list this beautiful variety, in fact we wonder just why some that were recommended, got in the list.

FOUR ESSENTIALS FOR CLEMATIS

1. They all must have full sun with a cool root soil. The base of the vine must be shaded.

2. Well drained, deeply dug soil containing plenty of humus, with some lime.

3. Do not transplant too early in the spring; never in the summer or autumn.

4. Do not prune freely and know what method for each species, when you do prune. They are not all pruned alike.

An English Flower Garden

It seems that so few Americans of late years are inclined to create a garden such as the one described here. Usually, we hire everything done and the result is a standard planting just like all the rest along the street, with color combinations of house paint for the main attraction. A plot of ground should provide food, recreation, beauty and a place for one to be rather than on the highway killing each other. The garden mentioned here is in Surrey, England and Mrs. Deighton writes: A few snaps of our garden. It may interest you to know that when my husband bought the 5 acres of land about

I have grown many shrubs, trees, herbaceous and rock plants from seed, also rooted quantities of cuttings. Before we had a greenhouse, I was very successful with my jam-jar greenhouse and made cuttings of rose shrubs plants and many climbers. The nursery bed was in a sheltered south part of the garden. Over several cuttings, I put a clean 2-lb glass jam jar; this work was usually done in early autumn and the jars were left undisturbed until late spring; the only attention given was after each frost, if the jars had been lifted, they were once again pushed firmly back into the soil; the neck of



Mrs. Deighton's Terrace and Rockery—an English Home Garden.

30 years ago, it was a bare ploughed field. How I longed for a tree and a protecting hedge! After the house was built we planned the garden and worked hard for several years. At first we were pestered with wandering sheep, hares and rabbits; eventually we fenced in the 5 acres and planted beech hedges on all sides. What joy there is in creating a garden! An orchard was planted, then shrubberies, a greenhouse was built and the biggest thrill of all a large pond.

When we had excavated the chalk, we had a tremendous mountain of it by the pond. A bright idea occurred to me—with blocks, cement, sand and old iron, we started to form a rockery and waterfall around the mountain of chalk. After two years, it was finished and although we liked the idea from the start, the results were far beyond our imagination. We built in a water tank right at the top of the rockery with pipes from the pond to the tank. A pump was fixed so that we could pump the pond water up into the tank to set the waterfall working. There are steps on the west side leading to a seat at the top and further steps down the north side.

This rockery is ideal for alpine as there are numerous pockets with aspects, north, south, east and west. In the pond we planted red, yellow and pink water lilies, elodea and hornwort. Fish breed well in the pond where we have gold fish, shubunkins, rudd, etc. Two bog beds add charm to the picture.

At the south base of the rockery the children have a small netted-in pond and a little cemented winter house for terrapins. They are so cute and quite tame; they also had a gift of slow worms, these increase each year and do good work clearing the rockery of slugs and other pests. A grass snake has made a home on the island; it is a mystery where it came from.

the jar should be well down into the soil.

By Mrs. B. Deighton, England.

CANTERBURY BELLS AS HOUSE PLANTS

Those who have not given the Canterbury Bells a trial as a winter pot plant should do so this year.

In October lift a good young plant into a 6-inch pot, have a good ball of dirt on the plant.

They will stand the winter in a cool house and give a fine display of flowers the following spring.

A good hint on their culture is to pinch off the faded flowers promptly and a second set will result, a point well worth knowing of so beautiful a flower.

MOVING VIOLAS IN FULL FLOWER

A point well worth knowing is that Violas can be easily and safely moved when in full flower, if a good ball of dirt is taken and immediately watered after setting.

Of course, if the day is cloudy or it is done towards night, so much the better.

CLAY POTS

Clay pots absorb salts from chemical fertilizers and if these pots are used for such plants as Begonias, the lower leaves can be damaged.

It is advisable to use new or cleaned pots for these soft leaved plants.

CARAGANA ARBORESCENS

Pea-tree. Because these do not transplant easily the seed should be planted in pots in soil 2 parts loam and 1 part sand, planting them in the spring. If flats are used, the seedlings should be potted up as soon as possible, one plant to the pot.

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Growing Cytisus in Oregon State

By Glen Brown, Oregon.

A confusing term because it has been applied to plants in several genera, such as the Genistas of the florists, *Ruscus* or the butcher-broom and *Spartium* or Spanish broom, Scotch broom, which, altho *Cytisus scoparius*, has spread over lands of the coastal areas of Washington and Oregon to the extent that it is classed as a pest. It is a shrub 4-9 feet high with bright yellow flowers.

They Come in Many Colors

My experience with the 'brooms' concerns a group growing from 12-20 feet high and a most extensive and beautiful variety of colors. Brown, buff, white, purple, many different shades of red and orange. As they belong to the pea family there will be a combination of all these colors with wings of one color and keel of another. I should mention if one wants the pure white, it is called *Cytisus multiflorus* (C. albus) or the Portugal broom.

Originally, I purchased some mixed seed, of perhaps 3 or 4 different kinds but as they hybridize so very readily, I now have a great many colors that I am sure have not been named, altho English gardeners grow many named varieties.

But, they are most beautiful shrubs and it is intensely interesting to simply save a few seed of each and after planting them, watch the results! I have one particular 'pet' that resulted from this natural hybridization that is of a wine-red color and very striking. It is so nearly like the color of the wine known as Dubonnet, that I have given it that name.

Are Easily Grown

They are of easy culture and do well in most any type of soil. They are attractive in winter; the deep green of the twigs and small leaves of some varieties are striking in comparison to the stark bare branches of other shrubs and trees.

There is one thing I have found to be absolutely essential in growing them and that is they must be sheared or trimmed often, beginning when they are small. This shearing process on the young plants and an annual trimming on the older ones after blooming, tends to cause them to grow sturdy and compact. Otherwise they may become tall and 'leggy' and may be uprooted in strong winds or broken down under the weight of wet snow as the wood is somewhat brittle.

Grow them as specimens or in the border as an evergreen hedge or, in fact, almost any place one puts them, they are very desirable.

NOTE: Mr. Brown sent in some colored pictures of his *Cytisus*, which show the various colors in his garden and which we would have reproduced but good half-tones are not made from colors; a glossy print in black and white are necessary. Mr. Brown, by the way, is a very interested flower grower and grows commercially.

Mr. Brown also compliments us on our Magazine which we appreciate. While we try to print only practical and helpful material, one must keep in mind that those gardeners who enjoy this sort of reading are in the minority; the bulk of the readers want popular reading matter.

NAPHTHALENE and STRATIFICATION

Many seeds that are stratified or planted in the Fall are very likely to be eaten by rodents. Sprinkling naphthalene flakes over the seed will repel them. It can be purchased at any drug store.

LET NO ONE SAY, AND IT TO YOUR SHAME,

THAT ALL WAS BEAUTY HERE UNTIL YOU CAME.

SUBSCRIPTION PRICE \$2.00 12 ISSUES

IRIS

By Walter Welch, Indiana

PUMILAS IRIS

Until very recently the gardener has depended upon the *Crocus* for the opening spring display, followed by an interval when bloom was still scarce until the later *chamaeiris* type of dwarf *Iris* set the garden aflame with their bright yellow and purple forms.

Within the past few years a new type of *Iris* has been developed that is a complete stranger to the average gardener. Strangely enough it is a distant relative within the *Iridaceae* family of these early blooming *Crocus*. It blooms while yet the *Crocus* are in bloom and continues for approximately a month afterwards. This new type dwarf *Iris* is known as *pumila*.

The *Pumila Iris*

Pumila is a familiar name to many gardeners, yet they have probably never seen the true *pumila Iris*, as it has been a common practice among even the so-called authorities to call all dwarf *Iris* *pumilas*. In fact the *pumilas* have never been in commerce in America and therefore were unavailable to the public.

These *pumilas* are a distinct group of *Iris* representing a wild species known as *Iris pumila*. It is native to a wide area in southeast Europe, ranging from Austria to the Black Sea, over into south Russia, and south to Greece and the island of Crete. Forms from different vicinities show a variation in color, form and characteristics, yet they all have a common distinction that represents a definite type.

They are the earliest blooming of all the bearded *Iris*, usually flowering in early April in most areas. They are distinguished by their small and dainty proportions, being around four to four and a half inches high with small well proportioned blooms on slender stems and always as a single terminal flower. This lack of lateral branching is compensated by having several blooming stalks rising from a single rhizome as side fans, which is contrary to the usual performance of tall bearded *Iris* in which a single blooming stalk grows from the end of a rhizome. The resultant effect is a multiplicity of bloom literally covering the plant.

New *Pumila* Colors

Gardeners have become accustomed to know only purple and yellow forms in dwarfs and with such numerous varieties of this kind, some varieties are hardly distinguishable from one another. The *pumilas* are not restricted in their color range, to the extent that even though this species is not yet fully explored, we can boast of all tones of yellow from ivory to orange, pure true blues, deep violet to almost black, reddish to rich purple, lavenders, orchid, mulberry, mahogany to pure white and in patterns of selfs, bitones, amoenas, variegatas, neglectas and blends. What the future holds, nobody knows.

The first of this kind of dwarf to appear in commerce were three varieties put out by Robert Schriener, named *Sulina*, *Nana* and *Carpathia*. They were grown from seed collected in the Black Sea area. The next *pumila* to reach us was a form collected on the island of Crete, in the Mediterranean. This was called *Cretica* and is a distinctive color of light rosy purple. The three former varieties are violet, reddish blend and yellow bitone respectively.

Hybridizing Value of *Pumila Iris*

As we recognized the possibilities of these species for hybridizing we started searching for other forms and finally obtained an assortment that represents the greatest collection probably in the world. They are now on display at the Dwarf *Iris* Test

Garden at Middlebury, Ind. One specimen is called *I. attica*, which grows only in a particular area in Greece and is the diploid form, all of the others being of the tetraploid form. For those of you who are interested, I may say that the diploid form has two sets of 8 chromosomes and the tetraploid form has four sets, making a total of 16 and 32 chromosomes respectively. There are other varietal forms representing the Crimean, the Austrian, and Hungarian types of *pumila*.

Pumilas Not Difficult to Breed

Breeding of these *pumilas* is very simple. As they are of a similar ancestral origin the inheritance factor are exchangeable and all latent and inherent characters can be segregated by simple Mendelian rules. By selfing or intercrossing the various forms we can expect to get the full gametic range of colors, patterns and characteristics. For example we had no blues or whites, but by this method they soon appeared, along with other colors. The first real blue to appear was named April Morn and another a neglecta is Blue Spot, then there is Little Balkan which is on the mulberry order. This constitutes all of the color forms that are now available on the market but in the hybridizers gardens many other forms are flourishing and will soon appear in commerce.

I am calling your attention to this new type of dwarf *Iris* for two particular reasons. First, there are those people who have known only the old *chamaeiris* type of dwarfs and some are not very enthusiastic about them. Even these older varieties have been improved and the person who is still critical of "dwarfs" is simply uninformed of modern development. Next, I want you to see these *pumilas*, not as a single isolated bloom and then passing judgement but grown in a clump, several clumps of various colors for that matter then you will be impressed and convinced of their outstanding value in the spring garden.

GENTIANAS

By Arthur G. Eldredge

These are strangers to the average gardener, who perhaps has never seen one in the wild. To others, the "bottle" or closed *Gentian* and possibly the fringed type may be familiar for they are the most commonly recognized species of the eastern states, generally never plentiful. *G. Andrewsii* escaped my boyhood attention in the home region of Mass. and it was not until many years later in my journeying that it stood before me one day on a trout stream in Michigan. On the margin of an old logging stream was a mossy log, on one end of which stood three blue and a white, not over six inches in height. What a welcome sight after being strangers so long. The fly rod was laid aside while the ever present camera made a record that has often served a useful purpose.

In the meadows of high mountain valleys of the Rockies with rugged slopes for a background beyond, the snow streaked peaks pointing to a cloud flecked sky of violet blue, we discover in the foreground large colonies of *G. affinis* standing amid the tawny marsh grass.

There are numerous species from the Swiss Alps, among which is one of particular interest. It is *G. acaulis* which like *Clusii* and *angustifolia*, are stemless plants. At high altitudes there are periods of unfavorable weather that prevent the flower from opening to receive insect pollination. These species overcome the emergency by a unique method of self-pollination. At first, their large flower on a short stem stands upright in anticipation that a little sunshine will permit them to open for a few minutes. As maturity arrives without having any insect visitors, the pollen sheds, falling to the base of the blossom. The stigma now becoming receptive induces the stem to bend so that the flower touches the slope. In this position the pollen rolls down the folds, thereby

burying the stigma.

Culture of these plants is generally avoided because of the idea that they are difficult to germinate. Many other seed are in the same class but the reward for extra effort is worth while. Correvon can smooth your difficulties in growing of alpine seeds.

In the *Gentian* family is the genus *Sabatia* whose members we would hardly suspect of belonging, if we did not consult the botany. Of this group, *S. stellaris* is a lovely wheel-shaped blossom, rose-purple and an inch or more in diameter. It's grassy stems and leaves are invisible at a few feet, so that the flower appears to be floating in the puffy breeze just above the top of the surrounding marsh grass, *Spartina*. The *Gentians* are quite exceptional in that they give us flowers in yellow, red and heavenly blue.

Primula Malacoides

By Wolfgang Schrader, Germany

No kind of plant has produced so many variations and novelties in the last 10-20 years as has *Primula malacoides*. If one admires the giant-flowered types of today, one would hardly believe in a relationship with modest wild plant that came to England from southern China about 30 or 40 years ago. It grows there on the edges of the rice fields or in moist places as a weed and has small blooms only, so that the nurseries and seed growers did not show great interest for this wild *Primula* at that time, confining it in the main to the botanic gardens.

It showed good progress there, however, thanks to the regular good culture and free stand, so that it began improving and getting more popular, the more as it was easy to be grown. It requires not much warmth in winter, simply a bright stand and a regular watering. You sow it from mid-June until August. Prick out the seedling, shift into single pots in the autumn, later into larger pots, which are given a bright, clear stand in the greenhouse or in warm frames or the window of your room.

Do not sow earlier than mid-June and not later than the end of August.

The first blooms will open at Christmas from the early sowings; the last sowing will finish flowering with the first warm days of Spring. A good flower too for this period between Christmas and Easter when flowering pot plants are scarce. Brilliant colors and a sweet fragrance enhance its value. New types have been found to be polyploid against the former small-flowered bushy growing plants and a marvellous novelty will be offered this year with giant fringed petals of a brilliant carmine-rose, also one with big balls like a large *Primula cashmeriana*. The varieties now most recommended in Germany are the following:

1. Hyacinth-flowered rose.
 2. Hyacinth-flowered white with lilac hue.
 3. Large flowered 'First Spring', a soft salmon-rose.
 4. 'Rose Basket', double rose and of an erect growth so that several plants can be potted together to make super blooming plants.
 5. New large flowered deep Red.
- Primula malacoides* is free of the annoying qualities of *P. obconica*, the leaves of which may cause irritations of the skin. (We expect to list some of these new varieties this season).

THE HARDINESS MAP

You will find elsewhere in this issue the hardiness map we have remarked of in past issues.

The value in this will depend upon corrections and additions made by our readers. It is impossible for one person to know deficiency but you know if certain shrubs or trees are winter-hardy in your section. Drop us and postal when you can.

We wish to locate sources for the following seeds:

<i>Loiseleuria procumbens</i> .	12A
<i>Pachistima myrsinites</i> .	12A

Summer Sowing of Hardy Perennials

Nearly all the hardy perennials and biennials should be started as early in the summer as possible so that the seedlings can be grown with good roots and early enough to be set out in the early fall and thus become well established before winter sets in. Many plants, transplanted out too late in the fall are heaved out of the ground by spring and it is seldom that they ever make good plants.

In selecting kinds for the start, you must keep in mind the nature of the plant you are working with; those that are cool weather growers do not take well to the hot dry August weather and therefore you either



GIANT DELPHINIUMS

start them in the seed flats a little later or you provide suitable shelter for them during the hot period of the summer. Most seedlings need some shade during this period and you should have lath sash ready for this purpose.

Early Flowering Perennials

Some of the real early spring flowering plants, like Alyssum, do not take well to late summer transplanting and should be started a little early. Pansies should be started in June and up into July as a rule, this gives you good plants for early transplanting. If they are started late in July, it might be well to leave them in the flats if they are growing well, leaving them in the frame and transplant them out early in the spring. Delphiniums are usually started in August but if started earlier you will have better plants by winter and for this purpose, we have made special arrangements for early Delphinium seed from which we are sure you will have good germination results.

Planting the Seed

We have tried all methods for starting seeds and one will have good results one season with one method and the next season with some other. For small lots, sowing them in low pots is best because each can be handled to suit its needs; the seed won't get washed into an adjoining lot; watering can be done from the bottom and when the seedlings can be moved, the pot can be finished where if they are in a flat with other kinds, there is always damage done. In lots large enough for a flatfull those flats usually are more satisfactory. We also have used the cypress bands for tests on very small lots, using the 1 3/4-inch size; this makes it possible to plant just a few seeds per band and if it happens that some neglect occurs or you have the wrong time or wrong soil medium, you still have seed left with which you can follow up.

There are special soil mixtures for seed beds, but most of them are made up of a

good fibrous loam, 3 parts and one of clean sharp sand; if one is growing any amount of plants of a particular flower, than the soil mixture should be made up special. Lime and acid soils must be kept in mind and in adding lime to soil mixtures, never use the fine air slacked lime; it is too fine and tends to clog the soil, coarse limestone is best; avoid plaster for it contains cement.

Which Method of Sowing

After the seed has been planted or sown, they should always be pressed into the soil, even the very small kinds; large seeds should have soil over them but the smaller they are the more careful you will have to be. Sand, a coarse, sharp kind, can be used as a covering or milled sphagnum moss, both tend to hold the surface moisture and also prevents a baked surface which prevents the seedlings from getting thru. If they are watered from the bottom and the soil is loose, there should be little danger in over watering. The addition of a little milled sphagnum moss in the soil mixture will tend to hold the moisture longer.

If the seed pots or flats are placed in a cold frame, it is well to cover them with screen, a quartered-inch mesh is good, and if cut to just fit the flat, it can be used indefinitely, will save the seeds from damage by mice or hold down shading paper.

IDEAL PLANT MARKERS

We are listing for the first time the Ideal Plant Marker.

In our own plantings, the markers we have are all right for some flowers but in other plantings, they are of little value. What we need mostly is a marker that stands up from the ground a couple of feet, one that won't heave out during the winter, be washed or blown away and if hit in cultivation, won't be ruined.

The Ideal Marker looks like it has all these points. It has a stiff wire leg, 18 inches long and at the top a holder for a white plastic label 7/8 by 2 3/8 inches on which you print the name with a special pencil. They are also made in a King Size for street or public park use and a small edition for pots.

The problem will be in mailing just a few. They could be bent if not well packed. Prices: Regular Size; 18" high; \$2.00 per dozen, prepaid. King Size: \$4.00 per dozen, postpaid. The small size for pots: 90¢ per dozen, prepaid.

THERMOPSIS CAROLINIANA

Mrs James Briles of Indianapolis, Indiana, writes: I have had *Thermopsis caroliniana* in my garden here for eight years and it grows, multiplies and blooms splendidly and no winter protection. You give N. Car. to Ga. as its limit.

Remarks: The mention of a section as above, does not mean that it cannot be grown elsewhere or farther north or south but means that the section given is its native locality; from this information the reader can get some idea of the over-all requirements of the species; as to hardiness, this will either be listed as (IV) or the 4th zone which is Mrs. Briles or it will say hardy up to Michigan, etc. Thanks for this information Mrs. Briles; we hope to get the hardiness map ready by the next issue.

CUTTINGS OF RARE CACTI

In the case of highly succulent types of Cactus species, much trouble is had with rot. An article in the New Zealand Gardener brings out the point that many of them should be rooted in the AIR! A French author states that he always has complete success with such 'difficult' species by striking cuttings IN AIR. He hangs them right side up about one inch above, but not in contact with, a cup of water. One must be careful to protect the delicate new rootlets from possible sun burn, otherwise they may shrivel up.

SUBSCRIPTION PRICE: \$2.00, 12 issues.

Planting Ginseng Seed

Ginseng seed should be planted in beds 6-7 feet wide. The beds should be raised up 5-6 inches by throwing the soil from the paths, onto the beds. Plant the seed about an inch apart in the row and make the rows about 6 or 7 inches apart, covering the seed with about an inch of good loose soil.

Mulch the planting with about an inch or so of well rotted sawdust leaf mould or rotted wood and this should be left on the bed at all times.

The seeds germinate in Michigan about the first of May. Let the seedlings remain for two years before transplanting them elsewhere.

The seed sent for planting are in a moist condition and must not be dried out. If the weather is warm place the seed in the refrigerator till planted; do not keep them wet but just moist.

Ginseng should have some shade for it is found wild in the woods.

THE KALMIA

Kalmia latifolia is one of the choicest evergreen shrubs in cultivation. The waxy pink coral flowers are borne in clusters resembling inverted lamphshades.

It is a slow-growing shrub which is surface rooting and, therefore, should not be planted too deeply. It requires cool soil without any presence of lime. A liberal water supply is essential in dry weather.

No pruning is required but the flower stalks should be removed as soon as they will part easily from the point of growth.

Position and conditions of the soil are similar in many respects to that required for *Rhododendrons* and *Azaleas*.—The Australian Garden Lover.



Collianthemum anemonoides—Dr. Wilhelm Kreechbaum, Austria.

CASSINIA

A New Zealand shrub that may withstand our winters here in Michigan. It needs a place in poor soil.

There are several species, including *fulvida*, *leptophylla*, *Vanvillierii* and *retorta*.

During the past few weeks seed of more than a hundred Australian and New Zealand flowers have been received and will be listed in the new seed list now being revised and we hope will be ready in June.

ABUTILON VITIFOLIUM FOR THE GREENHOUSE.

A Chilean species with bluish mauve flowers, and a very good subject for a cool greenhouse. It is also hardy enough for the northern part of the South.

It can be grown in 8 or 10 inch pots and, when thus established, it can be pruned in February and repotted in March. A good fibrous loam, peat and leaf mould, equal parts, is ideal for them.

When growing from seed, keep them near heat while germinating.

They require good drainage and plenty of water when the pots are full of roots and in full growth. A weekly application of liquid manure is helpful at this stage of growth.

The Reh Method of Greenhouse Culture with Plastic Glass

Frederick O. and Winifred Reh of Belleville, Illinois, have published a booklet of 16 pages in which they list and discuss their method of growing plants (mainly Orchids) in their plastic fiber glass house.

There are many who are building small greenhouses and both the type of house and its operation, are problems. The Rehs evidently have many of these licked and in doing so have come up with some new ideas as well.

To quote from their forward, "We want to stress the fact that the light which comes through our plastic glass panels is a powerful cosmic force. To utilize the optimum advantages of this material it is imperative to bring the trinity of plant ecology—light, moisture and air—into a balance."

In any greenhouse, whether one covering arces or just the small hobby greenhouse, this trinity has always been a problem. Especially is this so in the small house where the operator is often absent most of the time and where the conditions within the house can change rapidly.

The writer has for some time been working on a small greenhouse that will fill the need of a hobby-house—a house that can be operated so that it will not be a "hobby-house" instead of a hobby-house and one, too, that the owner can work elsewhere during the day without worrying and that he can sleep at night.

First, the subject of light—the glass for the house. Outside of cost, and I understand the plastic glass costs nearly \$1.00 per square foot, it has many advantages. From the standpoint of cost, it can be erected on a much less frame work—the panels can be even set into the soil a foot, thus saving the cost of a cement foundation and only the pipe supports need be put into cement. As the panels are some 4x8 feet in size, only a limited amount of supporting material is needed. Even the roof supports are not so costly.

With plastic glass, the roof is made of the corrugated sections, 40" x 144". The side wall of plain panels. As the Rehs point out, the mere use of plastic glass alone, is not a panacea. The other problems of heat, air, humidity must also be brought under control.

Plastic glass has several practical advantages. It does not break in hail storms. Due to the large panels, there is less air leaks as well as water leaks. It does not frost as does a glass roof. It does not burn foliage nor is shading necessary in summer. All these points are problems in the small hobby greenhouse. However, good light is the important factor and the Rehs have this to say, "Good light is a prerequisite for normal plant growth. Synthesis of plant foods and hormones (anabolism) takes place under light. The conversion of this energy into cell growth usually takes place at night. The better the light, considering parallel factors—such as air and water—the more efficient the plant-factory operates in the anabolic stage of metabolism, and more and better growth takes place in the catabolic stage. Some plants, such as Carnations, tomatoes, etc., need more and longer light exposure than others. (Tomatoes needs less than an hour of darkness to complete a metabolic cycle.) Most Orchids, in their native habitat, are attuned to a day and night cycle of almost equal length, the year 'round'."

In the use of plastic glass, light is thoroughly diffused, making it almost impossible to cast a shadow, a factor helping to account for good plant growth. This results in it being possible to grow shapely plants even under the benches and with as good a result as those grown on the benches!

The effect of ultraviolet rays on the color

of flowers is especially benefited under plastic glass. Where shading is necessary on glass, several days of cloudy weather, upsets the normal reaction but with plastic glass, where no shading is necessary, this problem is eliminated. White Cattleyas develop a dark green color where under shaded glass it was a pale green.

As stated at the start, plastic glass is not the entire solution to the problem. The circulation of the air, is very important. This is solved by using circulating heaters, controlled by a thermostat and an aquastat, suspended from the roof. "It collects and circulates the cooling humid air from under the roof before the moisture condenses, and fans the air over the plants in the form of a warm humid breeze, thus eliminating drip."

The propeller fan-type heater, installed overhead, is being used in several large commercial greenhouses, the past 2-3 years. The heat is either hot water or steam, piped to the overhead unit, which is operated automatically and responds quickly to the slightest change in temperature.

Humidity and watering are important factors in the regular type greenhouse but under the plastic glass house, with overhead circulating fans, over watering is not a fault, because the circulating air in the house prevents condensation of moisture, in excess, on the plants.

The night circulation of the air is very important, too, to prevent air layering and to carry away the waste gases released by the plants, especially when crowded as is the usual case in small houses. Damping-off results from lack of air circulation at night. In the fields, the air necessarily circulates but in a closed house, this does not take place and results in several bad factors.

The Rehs grow Orchids, mainly. They seem to have worked out some very important angles, especially for the small greenhouse. Anyone wanting their booklet can write them at Belleville, Ill., enclosing \$2.00

We will appreciate letters from any one having experience on this problem. We are trying to work out a practical, inexpensive set-up for a small hobby-greenhouse and more information on this subject will follow in future issues, especially on the type of heater for the small house which still is not worked out so as to be both practical and reasonable in cost.

Iris cristata and lacustris

The former Iris usually is lavender with darker spot and marked with yellow on the crests. I have gathered plants of this near Liberty, Ky., but it is also found locally in North Carolina, Georgia and Arkansas.

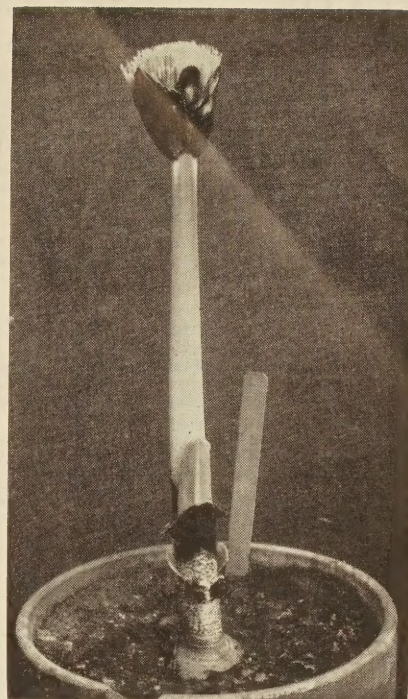
There are variations in the colors, one being white and I would be pleased to hear from any reader who knows of areas in which it grows. These variations will be appreciated. Here in Michigan it grows all right but it will heave out of the ground if not well drained.

I. lacustris is native of Wisconsin and found near Milwaukee the only place I know of. Are there any readers who know of this little Iris?

OYSTER SHELLS A SOURCE FOR LIME

The remark in Mr. Hannibal's article in this issue of using crushed oyster shells is a suggestion that is of value. Many growers have difficulty in securing a form of lime and may use slack lime which tends to bake the soil. Crushed oyster shells are easily found at any feed store; they will not only provide lime but will also loosen the soil.

SUBSCRIPTION PRICE \$2.00 12 ISSUES



Haemanthus nutallense—J. C. Bacher, Ore.

PANSIES FROM JULY PLANTING

Seed sown the first week in July will make plant large and strong enough to be transplanted to their permanent position by fall.

Seeds sown the last of July can be wintered over in a frame and these will give a later bloom than the first planting.

In transplanting be sure to press the soil well around the plant. The best Pansies are those grown in a rich soil and cow manure that is well decayed is ideal.

Where the Pansy planting is important, as it is with those growing plants for the market, the seed should be ordered in the spring, if new crop seed is wanted. The seed matures in June and not all of it is delivered by planting time, thus the early orders are naturally filled first. Many commercial growers are particular as to color blends but always buys the mixtures; where a pound or even a half pound is required it is always best to buy the varieties and thus get just what you need.

THINGS YOU CAN DO IN JUNE

Flower Seeds that can be sown:

- *Balsam
- *Cacalia (Tassel Flower)
- *Calliopsis
- *Celosia (Cockscomb)
- *Cllitoria
- *Cleome
- *Coleus
- *Cosmos, for late flowering
- *Didiscus (Blue Lace Flower)
- *Gaillardia
- *Helichrysum (Strawflower)
- *Marigold
- *Moonvine
- *Morning Glory (Ipomoea)
- *Portulaca (Moss Rose)
- *Tithonia
- *Torenia (Summer Pansy)
- *Zinnia

*Sow seeds in open.

CHENOPodium BONUS-HENRICUS

Good King Henry; Mercury; an old-time herb and a substitute for Asparagus; resembles it in flavor and more easily grown.

It is 12-18 inches tall and is best in a warm sunny position. Try growing it; it is a perennial so can be started now.

THE MAIL BOX



ROSE NIGRETTE WANTED

Glenn Brown of Ashland, Oregon wishes this rose; he wants to be sure it is the true variety.

CYTISUS ADAMI

The item in the last issue on *Cytisus Adami* interested me very much.

I have seedlings that are not of blooming age yet and I am of the opinion, considering its origin that it will not come true from seed. How is it propagated?

If the cuttings were taken from branches bearing *C. purpureus* flowers, it would seem to me that is what one would then have and the same would be true if branches were of *L. anagyroides*; that is what the resulting tree would be. Glenn Brown, Oregon.

Perhaps some of your readers may have had some experience with it.

MISSPELLED WORDS

Miss Signe Graiff of Washington state, writes about spelling flower names. Her first comment is on 'rosy-red', saying she would take it as a flower, half rose and half red; however our point on page 354 was that it should be 'rosy red' and not 'rosy-red'. They both mean the same but in 'rosy-red' you are hyphenating an adjective with a noun; maybe we are wrong, but if not, it is a common mistake.

The word, *Penstemon*, however, is spelled *Pentstemon*, originally, and as we are following *Hortus II* in both classification and spelling we have printed it always as *Penstemon*. The reason for this, is of course, the ease in pronouncing it without the extra 'T'. She asks about a bulb catalog. The spring catalog is now being revised and we hope to have it completed about June; this will have all the fall bulbs listed as well as the *Iris* and many additions to the seed list, including many Australian, New Zealand and Japanese collected seeds. It will be mailed free to all subscribers and those who have made purchases since January 1st.

GRAVITY MANOR

In our July, 1953 issue, the cover picture was of William Robinson's house at East Grinstead in England and known as Gravity Manor.

Robert A. Stansfield of California, writes: "I was particularly interested in the article on Gravity Manor. As a boy, I spent much of my life wandering over the estate. My grandmother was employed by William Robinson up until the time of his death. He was an invalid during his last remaining years but was well in his nineties when he died; she was in her seventies herself."

Gravity Manor was left in National Trust, but there are inadequate funds to keep the estate up the way it was during Mr. Robinson's lifetime. I can remember six gardeners being regularly employed. So many of the famous estates that have taken well over a hundred years to develop are gradually disappearing.

Once again, congratulations on your most interesting magazine.

SEEDS and PLASTIC GREENHOUSES

Rudolph E. Leide of Illinois writes in answer to our request for experiences with Maxlite, a plastic glass suitable for greenhouse use. He also calls our attention to the house Mr. Reh, in Belleville, has. We have written Mr. Reh and elsewhere we will have more to say about this subject.

Mr. Leide also advises he will attempt to get plants of *Rhus aromatica illinoensis* as requested in the last issue.



Limonium Peresii

Japanese Morning Glory

My Japanese Morning Glories are afflicted with light streaks in the leaves such as Mrs. Givens of Alaska describes, but as I have never seen any insects and the outer cell layer is not destroyed, as leaf hairs can still be seen, perhaps it is not the same trouble. In my plants these are sharply defined areas which seem to follow along and spread out from the rib system. Like Mrs. Givens, I have tried various sprays, and also foliar feeding. All of my plants of six varieties are affected but in different degrees, and no treatment so far has had any effect. This streaking is present in some of the seed leaves when they first unfold, which would seem to rule out a diet deficiency.

It is my opinion that this streaking is caused either by a seed borne virus infection or by some genetic condition of the ovule such as causes variation in some plants. I am inclined more to the virus theory as in some plants viruses cause a tearing down of the cell structure resulting in a transparency of the cells.

You might be interested in some of the details of Japanese pot culture of the Morning Glories. They are seeded in a sandy mixture, after soaking or filing the hard coat, and are transplanted as soon as the seed leaves are grown. They are grown individually in six or seven inch pots with a rich sandy mixture with some soot to bring out the color. In transplanting them the taproot is trimmed a bit and they are sunk almost up to their seed leaves. They must be shaded until they take hold but otherwise they require warmth at all times and all the sun they can get. The leaders and successive runners are pinched back to grow them bushy to a two or three foot pot trellis. They need quite a lot of water, which should be warm, and feeding with liquid manure or plant food during blooming. The pots should have very good drainage. If you move the pot out of the sun when it blooms each blossom will stay open a whole day.

These Morning Glories come in wonderful colors and show a great deal of variation so it is a lot of fun to raise them, but they do take a lot of space in the house. The Japanese grow them in pots outdoors in the summer.

By Mrs. F. W. Warburton, Mass.

Remarks: If the trouble was caused by a virus in the seed, we should have it in all seed sold but this is not the case; we will like to hear from other readers and in the meantime we will try to get an explanation to the matter.

A GERMINATING SUGGESTION

F. E. Blunck, of Finleyville, Pa., writes:

A suggestion on germinating ordinary flower seeds, is to moisten the seed, leave in the packet and place in the refrigerator or deep-freeze for a week or two; then thaw them out, moisten again and replace in the refrigerator again for a week or two, when they can be taken out again, thawed out and planted.

This is especially recommended for such seeds as *Primulas*, *Penstemons*, etc.

Note: Has any other reader tried this out, especially with check plantings?

JAPANESE IPOMOEAS IN HAWAII

Amy Greenwell of Hawaii writes: I was thrilled to see your list of Japanese Morning Glories. Before the war we were able to get the seeds here and what a lovely pot plant for the house they were.

As you can see by my order, I hope to try them again and so do some of my Japanese neighbors. Your new catalog is wonderful, and so complete.

While being climbers, we have not listed the large Morning Glories as pot plants but several readers have suggested it. Elsewhere in this issue we expect to have some cultural information from Japan; we also are planting a few kinds in pots now and will be pleased to have suggestions and comments on these beautiful Morning Glories. They should make sensational specimens at flower shows or Club meetings.

SOME REMARKS ON SEED LIST

Delphinium Menziesii is listed as 4-6 ft. This must be a misprint as it will scarcely exceed 15 inches. *Delphinium trollifolium* from our limits will reach the height indicated.

Ceanothus prostratus "HHP". This from our limits is cold-hardy, very much so. It is very difficult to transplant and a nursery friend of mine tells me that he expects up to 50% handling loss from nursery grown plants. I have propagated it from mallet cuttings set in an open propagating bed, (50-50 sand and peat moss) and it will come from seed sown in the fall. It is really a beauty. It is found in our mountains in loose volcanic soils, in full sun to light shade.

Yes, we can grow a wide range of material in Oregon, but we have have our problems out here, too! I have gardened on the East coast but I believe we have better gardeners out here, possibly because the materials and methods developed in Europe are applicable.

You have a fine list of *Penstemons*. I note that you list "diffusus v. Blue Bedder". Carl Purdy at one time had a "Blue Bedder" which was a selection from *P. hetraphyllus*. The two species are quite distinct; *Diffusus* as I know it is lavender to magenta, scarcely to be called blue. By S. W. Horn, Oregon.

POSITIVE ION GENERATOR

I have a positive ion generator in my 8 by 12 foot Orchid greenhouse, along with a thermostatically controlled heater, by which I maintain a minimum night temperature of 60 degrees F. and a maximum day temperature of 70 degrees.

On November 1, 1953, one potted plant produced six blossoms. About December 1st, another potted plant produced eight blossoms; December 12th, fourteen more and at the present time two additional spikes on the same plant are almost ready to bloom.

On making inquiry, I have learned that professional growers do not obtain blossoms until around the first of March and are amazed at my success in getting such early results. For the past two years I have had the same experience with negative ionizing and I am certainly convinced it does have a positive effect on the plants.

By Guy R. Daniel, San Francisco.

INCARVILLEA DELAVAYI

A fine hardy perennial belonging to the best border plants. Its roots are long, fleshy and tuberous and requires a good loamy soil and the delicately colored flowers should be protected from too hot and glaring sun.

One trouble with this beautiful flower is its attractiveness to slugs which feed upon the foliage and even attack the root stock. Where this condition occurs, a galvanized tin can be placed around the plant.

Biflora is pronounced bif-LOR-ah; *diphylla* is dif-IL-lah and *longiflora* is long-if-LO-rah,

The Characteristics of Tea

More people in the world drink tea than any other beverage, yet we in America know very little about the kind of tea we drink or why we like it. There are many kinds of apples—hard, winter cooking apples; juicy eating apples; tart pie apples and sweet tangy apples, each with its own name. Are there different tea trees, each bearing leaves of a characteristic flavor? The answer is no.

Unlike apples, a tea tree is just a tea tree. So far as we know there is just one tree and that is known only as a tea tree. True, it is that an Elm tree grown in poor soil on a windswept mountain will look different and be more wiry than a carefully tended elm in a country park. That is the essential difference in tea trees.

There is only One Kind of Tree

Soil, climate and altitude will cause tea leaves, grown on trees originally stemming from the same root, to vary. The first budding leaves of spring will differ from coarse, heat-worn, aging leaves of the fall. Some of these variations make for a difference in tea, but not necessarily for better tea. After nature has caused her differences in tea leaves man treats those leaves in various ways by manipulations, fermentation, firing and sifting.

The flavors of tea known to the average tea drinker of our country are man-made differences, but the time of picking and the climate in which the tree grows make the leaf more or less suited to the characteristics given by man.

For instance, the very delicate, scented teas, so prized by Chinese aristocracy, are based on the use of the first tender sprouting spring leaves which will absorb the scent of flower petals more readily, while the older leaves, having a deep, basic, strong, actual tea flavor, are suited to the stronger, more

rugged flavors used by outdoor workmen of a cold climate where the stimulating effect is desired. The native Chinese, who have inherited the greatest ability to appreciate the delicate tea flavor, are inclined to prefer the green tea which has been subjected to fewer man-made alterations.

All teas may be divided into green and black. This difference is caused by the oxidation or fermentation of the natural juices in the leaf. If an apple is bruised the flesh at that point turns brown. If a tea leaf is bruised to free the juices it contains, it, too, turns brown. Green tea is carefully handled and, when dried, retains its greenish hue. Black tea, however, is rubbed to bruise the leaf and when the oxidation or fermentation has reached the proper point the action is arrested by heating and drying the leaf.

Different Name of Tea

The names for the different kinds of teas on the American market often are the names of the territories where the tea is grown, less often for the processing or other characteristics. Pekoe and Orange Pekoe are not KINDS of tea, but merely leaf grades, much as tobacco leaves are graded. Only a few leaves at the end of a new twig are used for the beverage. The twig is called a 'flush' and bushes bear several flushes each season. An Orange Pekoe from China will taste altogether different from an Orange Pekoe from India's Darjeeling district. The leaf grades for black tea, beginning at the top of the 'flush' or twig, is: first, Broken Orange Pekoe, then Orange Pekoe, Pekoe and lowest down, Souchong. Grades for green tea is, first at top, 1st Gunpowder, then 2nd, Gunpowder, third, Young Hyson and last, Imperial.

NOTE: We are indebted to the Kien Chung Tea House, Weston 93, Mass. for this article.

ABOUT THE MAGAZINE AGAIN

We have so many letters from readers who are under the impression the magazine is published monthly; we hope to get it out every 2 or 3 months and under present conditions it cannot be published regularly.

We do not want to print a lot of just talk, altho some is pirted and trust our readers will send in material about flower growing. The magazine is not filled up with advertising so that there is a limit to the expense of each issue. Readers who are interested can further the magazine by subscriptions, pictures (should be black and white on glossy paper) and articles or items of interest both on cultural methods and descriptions, etc.

Very few sample copies can be sent out but we will send copies to anyone wishing to distribute them at flower club meetings.

DRYING PLUMES OF PAMPAS GRASS

Many readers have fine clumps of Pampas Grass in their yards and some of the plumes should be cut and dried for winter use.

Cut the plumes on a dry day just before they are at their best. Have a clear flame and hold the fluffy part about six or eight inches from the fire for a few minutes. Give them a good shaking, exposing all parts to the fire. Be careful tho as they are very inflammable.

They can be stood in a vase and will last for years.

MOLYBDENUM

The trace element molybdenum has been found to take an important part in the nitrogen cycle, mainly in the assimilation of nitrogen by plants.

The lack of molybdenum is very noticeable in Cauliflower. The indications are a cupping and narrowing of the leaves. This is commonly called "whiptails" by the gardeners.

Where the soil is acid, it is especially noticeable and this should be corrected by applying lime.

Sodium molybdate is used up to 10 pounds per acre with 2 pounds being the usual application. It can be applied with other fertilizers if necessary.

CAMPANULA VERICOLOR

It is best planted in a vertical faced wall so that the flowers can extend horizontally outwards. Its a Greek species but hardy.

The root forms a rhizome; the color of the flowers is a pale blue, a lovely luminous blue, with a white zone giving way to a deep violet center. Seeds abundantly, in a small valve at the base. It is easily propagated from seed which do not all come true as to the centers. It is perennial.

BILLBERGIA

It is not generally known that when watering them, a little water should also be poured down the tube formation of the leaves. The plant absorbs this water.

B. nutans and B. zebrina are both good house plants.

However, this is what happens in nature and what effect hard well water or chlorinated water will have, may be harmful.

SILENE ALPESTRIS

Few who grow alpine can afford to be without this beautiful white flower which gives a sheet of glossy looking star-like white flowers on a neat and attractive plant. It is, too, one of the earliest alpine to bloom in the spring. It thrives in any good loam, appreciating a little leaf mould and sand mixed in and while it is best in full sun it also will stand partial shade; grows about 6 inches high, is a true perennial and easily grown from seed.

SUBSCRIPTION PRICE: \$2.00, 12 issues.

BOOKS ON NATIONAL SUBJECTS

PRICES QUOTED ARE POSTPAID.

DESIGN FOR WAR. \$5.00

Reveals the secret moves that led to World War II. Also starts the unfinished story of World War III which has been launched in Korea. Factual comparisons of the promises that were made and the deeds which were actually accomplished. Second printing. By Frederic R. Sanborn.

PEARL HARBOR. \$3.75

The first connected narrative of what went on before and after the attack on Pearl Harbor. George E. Sokolsky calls it, "Tremendously important... should be in everyone's library." By George Morgenstern.

SOME WHERE SOUTH OF SUEZ. \$3.75

A powerful analysis of communism and Zionism as they lay plans for African future. Indicates the policies of the Dutch and English in South Africa and treats the color and racial problems of native, Moslem, Hindu and half-caste with complete frankness. By Douglas Reed.

UNCONDITIONAL HATRED. \$3.75

Russell Grenfell, R. N., a top British navy strategist with a long career in both world wars, assails the Vansittart theory of Germany as "the butcher-bird of Europe perpetually making war." In arguing that the Churchill policy of linking England's destiny with that of the U. S. can only end in ruining England. He demolishes the totalitarian thinking of the American and British liberals who are still fighting the Germans of the two great wars. By Russell Grenfell, R. N.

THE BLOODY STREAK. 35¢

In this book you will see famous international figures whom you may despise or admire as the pawns in a subtle game played from behind the political scene.

Here is a "Zion Curtain" behind which a handful of religious fanatics plan the creation of a Jewish World State. By Trevor David.

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A critical account of the New Deal. The only real debunking that FDR has ever had. Brings together all known and hitherto unknown facts about one of the most fantastic episodes in U. S. history. 17th. printing. By John T. Flynn.

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Our tragedy in Asia and who made it. The amazing story of how the left-wing took over America's most influential media—radio, movies, magazines, books—won the support of America for their plans and policies, persuaded our leaders to further the Soviet scheme. By John T. Flynn.

THE LATTIMORE STORY. \$1.00

The incredible facts about the "architect of our policy in Asia" and his part in the greatest conspiracy of our time. 96 pgs. By John T. Flynn.

MCCARTHYISM. 50¢

Here is Joe McCarthy's own story of his fight to rid the government of communists. Ills. with photos; thoroughly documented; 9 x 12, paper. By Senator Joseph McCarthy.

THE BEST OF THE TALL BEARDED IRIS

AIRY DREAM. 3—80¢; 5—\$1.25 35¢
A soft clear pink self; 33"; L.

AL-LU-WE. 40"; M 40¢
A large, bronze and red variegata, not commonly offered but is top-notch.

AMANDINE. \$2.00
Refreshing cool lemon-cream; best of this color; AM; 36"; ML.

AMBASSADEUR. 42"; ML* Each 40¢
An AM variety in hyssop and carmine; attractive.

AMBROSIA. 3—\$1.00 40¢
A strong grower and a pretty light pink with a showy tangerine beard; 36"; M.

AMIGO. 3—\$1.25 50¢
An enchanting pansy color; striking contrast with clear light lavender standards foiled by the deep purple-velvet edged falls; HM; AM; 34"; EM.

AMITOLA. 3—\$1.00 40¢
A pretty russet-pink, F a strawberry lavender with a gold blend, all set off with a pretty, broad, tangerine beard; 36"; L.

ANGELUS. 3—\$1.20; 5—\$1.60 Each 50¢
A very distinct and beautiful color in a creamy lavender-pink. The petals are broad, large; substance heavy; HM; AM. pretty orange B; 36"; L.

ARAB CHIEF. 3—\$1.50 60¢
This variety is a most attractive rich burnt orange, almost a henna tone. It is one of the brighter and most attractive and a favorite; HM; 36"; VL.

ARCTIC. 50¢
Prefuse blooming; beautiful huge flowers of white and gold.

AT DAWNING. 3—\$1.00 Each 50¢
Beautiful pinkish white standards with a gold base; falls a soft rose, gold-veined throat and deep orange beard.

AVONDALE. 3—\$1.50; 5—\$2.40 45¢
A pretty strawberry-red; HM; 33"; M.

AZURE SKIES. 3—\$1.25 5—\$2.25 50¢
A lovely ruffled pale lavender self. The standards are domed and flaring, falls almost horizontal, accented by a showy white beard; HM; AM; 33"; ML.

BALDWIN. 3—90¢; 5—\$1.25 Each 35¢
A large attractive lavender-blue color; HM; showy; 40"; M.

BALLET GIRL. 36"; EM 50¢
A very delicate shade of pink. It is a distinctive variety.

BEA ST HELENS. 50¢
Dark red shade; lighter at edges; 38"; EM*.

BERKELEY GOLD. 3—\$1.40 50¢
A deep clear yellow self of fine form. Color is intense and pure; HM; AM; 36".

BERMUDA SANDS. 3—\$1.50 60¢
A heavily ruffled flower in a lovely light coffee-tan color, a glint of gold shining through to brighten the whole. *The Dykes Winner* for 1949; 36"; M.

BLACK FOREST. 90¢
Deep satiny blue-black both in S and F; nicely formed; HM; 38"; ML.

BLACK HAWK. 28"; VE 50¢
Striking two-toned bloom; the standards a brilliant mulberry, falls intense violet-black, like black velvet.

BLUE HILLS. 3—90¢; 5—\$1.25 Each 35¢
Ruffled flowers in a showy cornflower-blue; 40"; M.

BLUE RHYTHM. 3—\$1.90 75¢
Soft medium blue with a silvery tone, velvety in texture and a Dykes Winner in 1950; 38"; ML.

MICHIGAN GROWN IRIS

Michigan grown Iris cannot be excelled. The soil and climate are ideal for all root growing plants.

Some sections in the West, produces a large showy white rhizomes, which comes from irrigation; these rhizomes are soft and we have found that at least a years start is lost in planting them.

Michigan rhizomes are not so large but they are solid and hard. Michigan winters tend, also, to produce a tough rhizome.

Where carriage charges are not paid by the shipper, the extra weight amounts to considerable, too.

SHIPPING TIME

All the bearded Iris can be shipped beginning about July 20th. The Siberian and some of the species are shipped later.

BLUE SHIMMER. 3—\$1.90 5—\$3.25 75¢
The clearest tone blue, peppered on crisp enameled ivory-white. It is a charming plicata; HM; AM; 36"; M.

BLUE TRIUMPH. 3—\$1.20; 5—\$1.90 50¢
The finest light blue, received both a HM; AM; 42 inches; M.

BLUE VALLEY. \$2.00
Claimed to be the nearest to a true blue; large full ruffled flowers of fine form and sparkling sheen; 36"; ML.



LOS ANGELES

BRANDYWINE. 3—\$1.20; 5—\$1.80 Each 50¢
Large silvery blue flowers; 36"; M.

BRUNHILDE. 36"; EM 50¢
A very uniform dark rich violet-blue self with a blue cast beard; HM; AM.

BRYCE CANYON. \$1.00
Huge flowers of a warm shade of henna-copper; fine form; bronze-yellow beard; 38"; ML.

BUCKSKIN. 3—\$1.40 50¢
This is by far the best tan colored Iris. It is a tall grower and bears many large blooms with large closed standards and wide flaring falls.

BUFFAWN. 3—\$1.40 50¢
A beautiful soft pinkish self with the most brilliant red-orange beard. It is

an unusual color; very pretty; 34"; E.

BURGUNDY ROSE. 35" \$2.50
The color blend of this strong growing variety is very striking. Blooms are ruffled, large, a dark amethyst color and free blooming.

BUTTERCUP LANE. 32" 50¢
A very heavily ruffled clean bright yellow on strong stems. An ideal variety.

CALUTTA. 3—\$1.40 50¢
Called a coconut-brown; very much like Amitola, except the F not as pink and with more gold at base; strong grower; attractive foliage, red at base; orange B; 42"; M*.

CALIFORNIA PEACH. 38"; EM 50¢
A beautiful pink-peach and apricot color with much more gold and yellow in it than China Maid; HM.

CAPT. COURAGEOUS. 44"; M 35¢
Pretty rose-buff color not often found listed.

CARFAX. 48"; M 35¢
A huge auricula purple flower.

CAROLINE BURR. 3—\$1.40 50¢
Ivory overlaid with chartreuse; GM; AM; 45"; M.

CASA MORENA. \$1.00
A rich, glowing coppery chestnut-brown; large attractive flower of the richest color; AM; 38"; M.

CASCADE SPLENDOR. \$2.00
A rich crimped flower of pink, apricot and tan blended into one color; showy orange B; heavy substance; 38"; L.

CHANTILLY. \$1.50
A large ruffled orchid-pink; the edges of both S and F are heavily frilled; AM; 36"; M.

CHEERIO. 40¢
One of the best early red bicolors, very popular. It is of good form and size.

CHIEF SIDAR. 3—\$1.00 40¢
This is a beautiful rich colored rose-red close to The Red Douglas color; 46".

CHIVALRY. \$1.50
Large, ruffled, deep blue flower; domed S; flaring F; vigorous; Dykes Medal, '47; a real nice blue; 36"; ML.

CHINA MAID. 3—\$1.40 50¢
A very beautiful blend in shades of pink, golden copper and lilac, smoothly blended together; large size and fine form; HM; AM; 36"; E.

CHRISTABELL. 36"; M 50¢
Dependable mid-season glowing red with a smooth finish and brilliant yellow beard; flowers are large and beautiful 50¢

CITY OF LINCOLN. 3—\$1.25 Each 50¢
Rich golden yellow standards and bright velvety red falls. We like this variety very much and groups of it in the garden makes it stand out above all others; HM; AM; 42"; ML.

CLARA NOYES. 30"; M 40¢
A fascinating color blend in tones of yellow, orange and apricot.

CLARIBEL. 40"; M 40¢
Large flowered, vigorous white plicata with blue stitching.

CHRISTABEL. 3—\$1.45 50¢
A very showy red; S frilled bronze-red; F deep velvety red; B showy brilliant yellow that gives the F an orange effect; 40"; M*.

COPPER LUSTRE. 36"; M 50¢
It definitely glows in its bright copper, gold and tan blendings, a very beautiful Iris. It was the 1938 Dykes Winner.

- CORAL MIST.** 3—\$1.35 50¢
Coral pink and red; HM; 38"; EM*.
- CORONET. 42"; L.*** 50¢
A very pretty golden tan blend; HM; this is a real pretty variety for its color.
- CORRIDA. 42"; L** 35¢
Pretty sky-blue with darker veins; AM.
- CRYSTAL BEAUTY.** 3—\$1.00 Each 35¢
A clean white variety that should be in all collections, especially as it is not costly. 45 inches; ML.
- CYRUS THE GREAT.** 3—\$1.00 40¢
A regal dark blue variety; HM; 38"; E.
- DAUNTLESS.** 50¢
A favorite; dark magenta cast; 40"; M.
- DEEP VELVET.** 60¢
Glistening red-violet shading to frosty claret-brown at the hafts; one of the best; 36"; ML.
- DEPUTE NOMBOLT. 52"; M** 50¢
Huge claret-crimson variety; Dykes Winner; AM; a dandy.
- DESTINY.** 3—\$1.00 40¢
Velvety, blackish plum-purple and a rich, heavy flower of good form and stem. A fine dark blue; 36"; ML.
- DIRECTEUR PINELLE.** 3—\$1.00 40¢
A real nice large flower; S clear bronze-red; B orange, very long and showy; 48"; M.
- DISPLAY.** 3—\$1.00 35¢
Mauve-rose to Spanish red; HM; 35"; M*.
- DORE.** 3—\$1.00 40¢
S rich yellow; F whitish at base and with a yellow blotch at end; 40"; ML*.
- DUKE OF BEDFORD.** 3—\$1.00 40¢
A real dark blue; nice flower; 34"; E.
- DYMA.** 3—\$1.00 40¢
A nice variety; S rich dark plum; F a little darker with a faint brown tinge at the base; 38"; M*.
- ELLA CALLIS.** 60¢
A yellow flower, flushed orange on F; 36"; ML.
- EL TOVAR.** 40¢
Honey yellow and almost black; 36".
- EASTER MORN. 42"; M*** 50¢
A heavy textured white receiving both an AM and HM.
- ETHELWYNN DUBUAR. 38"; ML*** 30¢
Orchid pink. 3—80¢; 5—\$1.10.
- ELMOHR.** 75¢
Reddish mulberry; heavy substance; hardy; AM; DM; 36".
- FAIR ELAINE. 35"; M** 50¢
An entrancing bicolor, pale primrose to cream-white standards and blazing rich gold falls. It is very attractive; HM; AM.
- ELSA SASS.** 3—\$1.40 50¢
A lemon-ice color, frilled, with a white blaze in center of F; 30"; ML*.
- FLORA ZENOR. 40"; EM** Each 50¢
An exotic color blend of pale cameo-pink shading into hafts of a deeper rose, all set off with its vivid red beard; AM.
- FRANK ADAMS.** 40¢
A rosy fawn bicolor with fawn-tan blend; AM; 48"; M*.
- GLORIA GLOVER.** 90¢
A nice deep orchid-pink; 36"; L.
- GLORIOLE. 3—\$1.00; 5—\$1.50** Each 40¢
A huge frosty pale blue of excellent substance; HM; AM; 40"; M.
- GOLDBEATER.** 65¢
Solid yellow; a gorgeous variety; good substance; 36"; M.
- GOLDEN HIND. 3—\$1.10; 5—\$1.75** 40¢
A very showy rich, clear, buttercup yellow and white; its richness is possessed by few Iris. The Dykes Winner for 1939. 30 inches; M.
- G. P. BAKER. 3—\$1.20; 5—\$1.65** Each 50¢
A masterpiece yellow, 12 blooms to the stalk; AM; Dykes Winner; 60"; M.
- GOLDEN FLEECE.** 3—\$1.40 50¢
This is wholly unlike any other Iris. A lemon-colored flower with creamy falls edged gold and beautifully ruffled, huge in size; HM; AM; 36"; ML.
- GOLDEN MAJESTY. 3—1.25; 5—\$1.75** 50¢
Striking lovely rich golden yellow with a broad form and well branched stems. Its color is very even and rich; HM; AM. 40 inches; ML.
- GOLDEN SPANGLE.** 75¢
A deeper Golden Fleece and one of the best golds; HM; 40"; EM.
- GOLDEN SPIKE. 3—\$1.25** Each 50¢
A splendid clear waxy deep yellow with a showy thick orange-yellow beard; AM. 36 inches; M.
- GOLDEN TREASURE. 3—\$1.25** Each 50¢
Solid deep cream with a rich golden orange all about the central portion of the flower. It stands out in any planting; very floriferous; 38"; M.
- GRACE MOHR.** 60¢
Wide flaring F; color same as in Ormohr, a soft gray-lavender veined violet; the form is different. tho.
- GRAND CANYON. 3—\$1.60** Each 60¢
An outstanding blend of canyon colors, plum, copper and gold. It is slightly ruffled and must be seen to be fully admired; AM; 38"; M.
- GREAT LAKES. 3—\$1.60; 5—\$2.30** 60¢
A pretty pure clear blue Iris. Petal texture is flaring and crisp, the beard almost white. It was the 1942 Dykes Winner and still not equalled; 46"; M.
- GUDRUM.** 3—\$1.40 50¢
An enormous creamy white with petals resembling a magnolia. Brilliant orange beard and a slight gold-dust sprinkling over the entire bloom; heavy texture. The Dykes Winner for 1931.
- GYPSY.** 75¢
A variegata of great charm; S coppery gold; F chestnut-brown; HM; 48"; M*.
- HAPPY DAYS.** 40¢
Giant primuline yellow, veined morocco red; HM; AM; 39"; EM.
- HELEN McGREGOR.** \$3.00
A very beautiful clear pale blue, flaring and daintily ruffled. For light blue it is supreme; HM.
- HOOSIER SUNRISE.** 60¢
A pretty large flowered mauve-pink and yellow; vigorous; 40"; ML*.
- JAKE.** 3—\$1.40 60¢
A pure white with no trace of other colors in it; large and free blooming; 38" ML.
- JASMANIA. 3—90¢; 5—\$1.40** Each 40¢
A pretty banana-yellow; HM; AM; 36 inches; very pretty; 36"; ML*.
- JEAN CAYEUX. 3—90¢; 5—\$1.40** 40¢
A showy blend of coffee and Havana brown. It must be seen to realize its beauty; a Dykes Winner; 36"; M*.
- JEAN LAFITTE. 3—\$1.00; 5—\$1.50** 05¢
Glowing coppery rose, a pretty variety. 36 inches; M.
- JEB STUART.** 3—90 35¢
A pretty red-brown; AM; 36"; M.
- KANSAS INGLESLIDE. 34"; E** 40¢
The first of the reds to bloom. It is a warm toned brown-red self and very pretty. It also blooms again in the fall where the season is long.
- KING JUBA. 3—90¢; 5—\$1.40** Each 35¢
Chamois variegata; this is a very pretty variety and much admired by visitors.
- LADY BOSCAWEN.** 90¢
A ruffled white of elegant beauty; it is a very pretty variety; 40"; M.
- LADY MOHR.** 75¢
A cross between the bearded Iris and an Oncocyclus hybrid producing a most unusual Iris. The standards are clear oyster-shell white, the falls frosted chartreuse-yellow with prominent veining; slightly fluted; very pretty.
- LEGEND. 3—85¢; 5—\$1.30** Each 40¢
A huge crimson-claret; showy; 36"; M.
- LIBERTY BELL.** 60¢
White with red-toned feathered stitched edging; very hardy and popular; 32"; M.
- L. MERTON GAGE.** 60¢
A yellow toned medium pink; fine form and substance; HM; 40".
- LORD OF JUNE. 3—\$1.00** Each 40¢
Gigantic blue, the falls marked with old gold; AM; SM; 40"; M.
- LOS ANGELES. 46"** 40¢
Gigantic white with standards faintly edged blue and with blue styles. Very showy.
- LOUVOIS. 3—\$1.00; 5—\$1.50** Each 40¢
Two shades of chocolate, deep, rich and velvety. Its a real valuable variety; AM. 36 inches; M.
- MADAM MAURICE LASSILLY.** 65¢
A beautiful sky blue and velvety purple; AM; DM; 37"; M.
- MAGIC CARPET.** 60¢
S russet with edges toning to strawberry F dark strawberry edged russet; showy.
- MAJENICA. 36"; M** 60¢
A salmon tinted pink with wide petals. It is a clear bright smoothly colored self.
- MASTER CHARLES.** 60¢
A refined glowing mulberry-purple; fine rounded form; 38"; M*.
- MATTERHORN. 3—\$1.20** Each 50¢
A gigantic flowered, pure white with rounded down-falling falls with no veining visible; very light yellow beard; HM; AM. 38 inches; EM.
- MELANIE. 3—\$1.20 5—\$1.80** 50¢
A lovely large flowered light pink. Truly a fine orchid-pink; 40"; M.
- MING YELLOW. 3—\$1.25** Each 50¢
One of the largest, stateliest yellows, evenly toned. Its form and bloom are fine; HM; AM; 36"; M.
- MINNIE COLQUITT.** 90¢
A beautiful plicata of pearly white, peppered with very striking bluish wine stippled border; 35"; EM.
- MISSOURI. 3—\$1.25; 5—\$1.80** Each 50¢
Strong, medium blue, with flaring petals. It should be in every Iris collection; 40".
- MOONLIGHT MADONNA.** 80¢
A lemon-ice, same as Elsa Sass; large flowers; ruffled; 36"; M.
- MOONLIT SEA.** 88¢
S white, heavily flushed lavender-violet; F same, darkening to mulberry-purple on lower edge; exquisite golden center; 36" M.
- MOROCCO ROSE. 3—\$1.25; 5—\$1.80** 50¢
A really beautiful warm rose-pink self with a soft yellow glow at the center, beard bright gold; 40"; M.
- MRS. WILLARD JACQUES. 29"; M** 40¢
A pleasing watermelon pink, waved and frilled. 3—\$1.00; 5—\$1.60
- MULBERRY ROSE. 3—\$1.90** Each 70¢
This is an outstanding variety. Color a deep radiant mulberry-rose self, having a brown shade; bronze beard; HM; AM; 40 inches; M.
- NENE. 3—\$1.00; 5—\$1.50** Each 40¢
A dandy variety, standards soft lilac and falls rich old rose. The flowers are very large and showy; 38 inches.
- NIGHTFALL.** 60¢
F a very velvety rich dark pansy-purple; S a lighter shade; medium blue beard; AM; 36"; M.
- OLA KALA. 3—\$2.00 5—\$3.25** 80¢
A rich golden yellow, almost orange; the falls are flaring and slightly frilled. A Dykes Winner for 1948 and it has been very popular since; 38"; M.
- OMAHA. 30"; M** 40¢
Soft rose to brown-cinnamon; huge flowers.

THE PICK OF THE TALL BEARDED IRIS

ORMOHR.

Gray lavender with veins and dots of violet thruout; AM; 40"; M*. 59¢

PLUIE D'OR. 3—\$1.00; 5—\$1.50 Each 40¢
Dykes Winner; empire yellow; AM; good. 36 inches; ML.

PINK CAMEO.

A new pink of outstanding value. The petals are slightly flaring; the pointed buds are much deeper in color, adding to its beauty; 36"; EM. \$1.50

PLURABELLA.

A French variety in blends of yellow and violet-blue; 48"; M. 50¢

PRAIRIE SUNSET. 3—\$1.60; 5—\$2.50 60¢

Really a glowing sunset blend of colors, pink, apricot and golden copper, brilliant. ML.

RAMESES.

The Dykes Winner for 1932; olive-buff to tourmaline-pink; HM; DM; 40"; ML. 3—\$1.00 Each 40¢

RANGER.

Very brilliant dark crimson-red; cone-shaped S; one of the fine varieties; 36"; L. \$1.50

RED VALOR.

A superb red that has been selling for \$3.00; received a GM; AM; 38"; L*. 90¢

REMEMBRANCE.

A beautiful soft pink and pale yellow blend; anise variety; 38"; ML. 75¢

ROSE BOWL.

Deep rose self with both haft and beard in gold; 40 inches. 3—\$1.25 Each 50¢

ROSY WINGS.

The Dykes Winner for 1939. A soft rose-red with a trace of copped shining through and brightened with a bright orange beard; 38"; EM. 3—\$1.00; 5—\$1.50 40¢

SABLE.

Almost a black Iris, with a blue beard. Has a pretty lustrous sheen; 37"; EM. 3—\$1.60 Each 60¢

SAN FRANCISCO.

A Dykes Winner; a dandy lavender plicata. 42"; M. 50¢

SHAH JEHAN.

Rich oriental colors; much admired by visitors; 33"; ML. 3—\$1.00; 5—\$1.50 40¢

SHARKSKIN.

A pure white with a silken finish with a leather-like substance. It is one of the finer whites and should be in every collection; AM; 38"; M. 60¢

SHINING WATERS.

A lovely satiny blue; HM; AM; 48"; EM. 3—\$1.00 Each 40¢

PLANTING DIRECTIONS FOR IRIS

There is nothing difficult in setting out Iris. The rhizome should be half out of the soil, but in planting some dirt can be drawn towards the rhizome so as to hold surface moisture. This high soil can be removed by the next spring, when much of it will naturally level off by the action of the rains and in hoeing.

When Iris are set out, say after September 15th, it is best to draw 2-3 inches of soil over the rhizome, just before freezing. This will keep most of the plants from heaving out during the winter; the first thing in the spring, go over the Iris and see that all rhizomes are pushed back into the soil and also draw some of the excess soil off the rhizomes.

All Iris plants should be well drained so that water never stands around them.

Other than the above little else is of special importance.

SHIRVAN.

Rightly described as Shirvan-rug color; has a golden effect; tangerine B; 33"; M. 3—\$1.00 Each 40¢

SIERRA BLUE.

A pretty, medium blue; Dykes Medal Winner; 48"; M. 40¢

SNOW FLURRY.

Standards are a pure icy white, nicely ruffled, the falls large, broad and pure white. It is especially valued for its many flowers at one time; 36"; M. 3—\$2.00 5—\$3.00 80

SOLID MAHOGANY.

A smooth deep flowered mahogany-red. In the deep red class this is one of the very best; AM; 38"; M. \$1.00

SPANISH PEAKS.

This a complete white; white flower, white throat, half, the style arms and even the beard. It is nicely formed and of heavy substance; AM; 38"; ML. \$2.00

SPUN GOLD.

The 1944 Dykes Winner. It is very popular. The color is a rich velvety golden yellow and is an all around good variety. 38 inches; ML*. 3—\$1.50 60¢

STARDOM.

A beautiful salmon, shading to buff with a showy bright orange beard. Extremely vigorous; 34"; M. 3—\$1.00; 5—\$1.50 Each 40¢

SYLVIA MURRY.

A very fine clear frosty blue; good 75¢

growth; AM; 38"; EM.

TAJ MAHAL.

A dadny pure white with lavender veins; 36"; M. 40¢

THE ADMIRAL.

Intense blue; F flaring, of fine form; showy; 36"; ML. 60¢

THE BLACK DOUGLAS.

A very rich and velvety blackish violet-purple. It is very popular. 3—\$1.00; 5—\$1.50 40¢

THE RED DOUGLAS.

A very popular dark red Iris. Very uniform and of great size; the Dykes Winner for 1941. One of the finest Iris; 36". 3—\$1.60 Each 60¢

THEODALINDA.

The largest plicata of the Los Angeles type; a satiny white with buttonhole stitching of bright but delicate blue; 37". 3—\$1.00 Each 40¢

TIFFANJA.

A creamy colonial buff with more white cast falls, both speckled and sprinkled light golden brown; 36"; M. 3—\$1.50 60¢

TIFFANY.

Yellow and maroon plicata with light yellow background. The heavy plicata borders are deep red-brown or maroon. 36"; M. 50¢

TREASURE ISLAND.

A clear yellow self; pure coloring; excellent form; 36"; ML. 3—\$1.50 60¢

VEISHEA.

A bright rosy copper blend with a clean blue blaze at haft; 36"; M. 60¢

VIOLET SYMPHONY.

Gleaming violet self; huge flower. broad S and wide F; AM; 40"; M. 75¢

WABASH.

Here is a showy variety especially in groups. The standards are clean white and the falls bright purple. More white should be planted in the Iris garden and Wabash is especially good for this purpose. The Dykes Winner for 1940; 36"; M*. 3—\$1.30; 5—\$2.00 Each 50¢

WAKARUSA.

Velvety burnt orange and brilliant red blend; HM; 34"; M. 75¢

WHITE CITY.

Immense silken flowers of blue-white with a showy heart of plumago-blue. It is a very showy variety; 44"; EM. 3—\$1.75 Each 75¢

WINTER CARNIVAL.

A very large crisp white with a touch of gold at the throat. It is a very beautiful variety and one of the best whites. 38"; M* 90¢

THE INTERMEDIATE IRIS BLOOMS IN MAY

To lengthen your IRIS season the Intermediate type should be included in your Iris collection. As they usually grow from 18"-28" high they can be used in places where the taller varieties would not be suitable.

Their blooming season starts in May here in Michigan and continues into the early Tall Bearded season.

ABELARD. 3—\$1.00 5—\$1.40 40¢
A prolific variety; color bright mahogany; HM; 26"; E.

ARCHEVEQUE. 24"; M* 35¢
Very free blooming wine-red to black, a grape color with a very strong grape odor; noticeable in bouquets.

CHALLENGER. 50¢

INTERMEDIATE COLLECTION

15 different varieties of the above
list my selection, all labeled for
ONLY \$5.00; 10 for \$3.25; postpaid.

Richest black purple with a brown-orange B; not a real large flower but very free flowering; 28"; E.

CRYSORO. 26"; E 40¢
This variety sometimes blooms again in the fall; rich yellow; HM.

DALILA. 40¢
S light pinkish white, ruffled; F cherry-red, edged white; B yellow; 24"; M.

DOXA. 50¢
S metal sheen, daak buff; F darker, edged like S; B distinct gold blend; 18"; E.

FRO. 3—\$1.30 50¢
S rich yellow; F dark strawberry edged yellow, heavily feathered in white; 24".

ELIABETH HUNTINGTON. 3—\$1.40 50¢
A blue Zue, sky-blue F with crinkled petals; F darker with reddish tinge; B showy tangerine; this variety looks especially nice viewed from above.

GAY HUSSAR. 3—\$1.30 50¢
A very showy and attractive variegata in chrome and ox-blood; it is very showy for accent in the rockery; 20"; M.

GLEE. 18"; E 35¢
A soft yellow with frilled petals; rather dwarf growing; AM.

IRIS KING. 3—\$1.00 Each 35¢

Old gold and deep brown-maroon, edged brown on the standards; AM; 24"; M.

KING KARL. 3—\$1.00 Each 35¢

Cream dotted with rose; very nice; AM. 28 inches; M*.

LA NEIGE. 28"; M* 35¢

A pretty waxy cream-white.

MA MIE. 28"; M* 35¢

A pretty white frilled blue; AM.

NEHEWKA. 28"; M 40¢

A beautiful variety; darkest blue-purple plicata on white back ground.

RED ORCHID. 28"; E 35¢

Vigorous and prolific; brilliant ruby-brown with gold beard; HM.

SPARK. 28"; E 35¢

A striking fiery brick red.

ST OSYTH. 40¢

Duck egg-blue self; 30"; M.

TAN TOY. 3—\$1.00 Each 35¢

A beautiful tan-brown color; 18"; ML*.

TITMOUSE. 3—\$1.00; 5—\$1.40 Each 40¢

An unusual Table Iris with beautifully formed flowers in amber-yellow, speckled and edged violet; 28"; M.

VALANCIA. 3—\$1.00; 5—\$1.40 Each 35¢

Ruffled flowers, orange-buff; 24"; ML.

WARBLER. 25"; M* 50¢

A pretty pure yellow; nice Table Iris.

WIDGET. 24"; EM 60¢

Table Iris; white plicata, speckled lavender.

ZUA. 3—\$1.25; 5—\$2.00 Each 50¢

A very unusual variety; the most crinkled and ruffled Iris variety; color pearl gray; 18 inches; E.

SIBERIAN IRIS

These are shipped separately from the other types of Iris and will reach you late in September. See that the rhizomes are protected from heaving out of the ground by winter frosts. Otherwise there are no special cultural directions.

BOB WHITE. 3—\$1.25 Each 50¢

A nice waxy snow white variety.

CAEZAR'S BROTHER. 50¢

An intense velvety blue, real dark; 48"; the most popular of this color.

GAY HEART. 3—\$1.25 Each 50¢

A nice dark blue self.

SIBERIAN COLLECTION

6 Varieties, my selection for ONLY \$2.50, postpaid. This is a special offer; all plants labeled.

HELEN ASTER. 3—\$2.25 Each 90¢

Well rounded rosy red with halo near the throat of the falls; AM; HM; 30".

MILDRED STALHAN. 50¢

Pale China-blue; F horizontal.

NORA DISTIN. 50¢

Blue and white; nice form.

PERRY'S BLUE. 3—\$1.00 Each 50¢

One of the best blues.

SKYLARK. 3—\$1.25 Each 50¢

An exquisite light blue.

SOUND MONEY. 3—\$1.25 Each 50¢

A good clear yellow; one of the best "50".

SUMMER SKY. 75¢

F flaring white; S pale blue; 32".

WHITE DOE. 3—\$1.25 Each 50¢

A beautiful large white flower

DWARF IRIS FOR THE ROCKERY

The Dwarf Bearded Iris has become very popular and next to the Tall Bearded, are the best Iris sellers. They are ideal for edging along walks and in the rockery.

Most of them grow about 8"-10" tall and they should be planted about 12" apart. They flower earlier than the other types of Iris and in the central states, may begin as early as March and by May are through, when the Intermediates and tall types begin to bloom. Their flowers are of the very best colors.

We offer only the best varieties.

ARAMIS. 3—\$1.00 Each 35¢

A dainty light yellow of quality; 5"; E.

ARENARIA. 3—\$1.00 Each 35¢

The foliage is grass-like in this variety; the color a fine yellow.

AZUREA. 3—\$1.00; 5—\$1.50 Each 35¢

A pretty variety in pale blue with beard; second earliest to bloom; 3"; EE.

BLACK MIDGET. 3—\$1.25 Each 50¢

Almost a black color; shows up well against a white background; 9"; M.

BLUE BEARD. 3—\$1.00 Each 35¢

An unusual color, olive white with purple streaks on the falls; 8"; E.

BLUE JADE. 3—\$1.25 50¢

Large flowered dark blue-purple; 8"; B orange; whole plant has a dark look.

BRIDESMAID. 3—\$1.25 Each 50¢

Pale blue and yellow.

CYANEA. 90¢

S rich lavender; F darker and very showy; B white; 6"; EE.

DIXMUDE. 3—\$1.00 Each 35¢

A pretty rich violet-purple flower; strong grower; 10"; E.

Dr. MANN. 3—\$1.00; 5—\$1.50 Each 35¢

A very long lasting prolific bloomer; smoky to Petunia-violet color; 6"; M*.

EBURNA. 3—\$1.00; 5—\$1.50 Each 35¢

Lovely whitish yellow; 10 inches; E.

ELF. 3—\$1.25 Each 50¢

A wide petaled red-purple that makes a bold effect in the rockery; 9".

FAIRY. 3—\$1.25 Each 50¢

One of the best "50"; light yellow.

FLORIDA. 3—\$1.00; 5—\$1.40 Each 35¢

A soft primrose-yellow; very attractive. 6 inches; Early.

GRAMINEA. 3—90¢; 5—\$1.40 Each 35¢

Strong growing rich red toned fragrant variety; 12 inches; E.

HARBOR LIGHTS. 3—\$1.25 Each 50¢

Light yellow and of the best quality.

LADDIE BOY. 3—\$1.00 Each 35¢

A rich velvety deep blue; 15"; E.

LITTLE JEWEL. 3—\$1.25 Each 50¢

A pretty white variety with a faint blue cast and olive-green and ochre veins at the haft; E.

LOBELIA. 3—\$1.00 Each 35¢

A very good dark blue self; 8"; E.

MOROCCAIN. 3—\$1.25 Each 50¢

The standards are a clear violet; the falls a pansy-violet; nice.

MIST 'OPINK. 3—\$2.00 Each \$1.00

A showy red-pink with flaring falls; one of the best of the Dwarfs; 8"; E*.

ORANGE QUEEN. 3—\$1.00 Each 35¢

A beautiful deep rich yellow; substance very good; fragrant; 6"; E*.

PUMILA ATROVIOLOACEA. 3—\$1.00

5—\$1.50 Each 35¢

The Easter Iris; very dwarf and strong grower; violet color; 5"; EE*.

ROSE MIST. 3—\$1.00 Each 35¢

A very lovely mauve-pink; popular. 10 inches; early.

DWARF COLLECTION

20 Varieties of the above; our selection, all labeled, for ONLY \$6.35 postpaid. 10 Varieties for \$3.25.

SCHNEEKUPPE. 3—\$1.00 Each 35¢

White with a cream throat; one of the best "50"; 6".

SILVER ELF. 3—\$1.00 Each 35¢

This has a pretty frilled flower in a silky silver white flushed royal purple on the falls; 10"; E.

SNOW MAIDEN. 3—\$1.20 Each 40¢

A nice brown-tan blend of colors and a creamy gold beard; 16"; E.

SOCRATES. 3—\$1.00 Each 35¢

An excellent massing variety; uniform garnet tones; 6"; E.

SPRING SKIES. 3—\$1.00 Each 35¢

A more vigorous Azurea; 6"; EE.

STEWART. 3—\$1.00; 5—\$1.50 Each 35¢

A small and dainty yellow self; 6"; EE*.

TAMPA. 10"; EE 35¢

Grass-like foliage; dainty; red toned with cream; HM.

TINY TONY. 3—\$1.00; 5—\$1.50 Each 40¢

Very small variety; red toned; 4"; E*.

TONY. 3—\$1.00; 5—\$1.50 Each 40¢

Richest wine color; orange beard; 3"; E.

VILLEREAL. 3—\$1.00; 5—\$1.50 Each 40¢

Very nice variegata in old rose; 8"; E.

YELLOW FRILLS. 3—\$1.00; 5—\$1.50 Each 40¢

A very choice deep yellow dusted gold; frilled flowers; 10"; E*.

IRIS VARIETIES

There has not been as much improvement in the Dwarf Iris as in the other types and we would be pleased to hear from anyone having new varieties equal or better than the ones we are growing.

We expect to be able to add to this list by shipping time. Orders received before June will have an extra Iris added. These will be shipped in June as they mature before the other Iris.

IRIS SPECIES

BRON SPUR. 75¢

Sepia and old gold and yellow; 60".

CHAMAEIRIS. 3—\$1.25 5—\$2.00 50¢

These bloom just after the Dwarfs and grow 6-12 inches tall; I have several unnamed varieties, all very nice; where 3 or 5 are ordered, they will all be different. I recommend them highly for a dwarf planting; even the foliage is attractive during the entire season.

CRISTATA. 75¢

A beautiful little species native of Ky.

and nearby states. Should be removed right after flowering in May. Flower is a light blue with a beautiful dark blue eye; 3"; ideal for the rockery.

ENSATA. 75¢**ENSATA, PEKIN FORM.** 75¢**FLAVESCENS.** (Imbricata) 75¢**HOOKERIANA.** 75¢**IMBRICATA.** (flavescens) 75¢**KERNERIANA.** 75¢**KOCHII.** 3—\$1.25 Each 50¢

A bearded species; early; fragrant; red-

purple, yellow beard; AM.

PSEUDACORUS BASTARDII. 75¢**PSEUDACORUS FL. PL.** 3—\$1.75 75¢A rare double form of beardless Iris; rosette-like flowers in deep yellow. The four kinds will be mixed or they can be had in separate lots. **CAPS-X4.** 35¢**IUTHENICA.** 3—\$1.25 Each 50¢

A tiny light yellow self; bearded type; 4"; early. Should be in a dry, sunny spot; fragrance of Violets.

REICHEBACHII. 3—\$1.25 Each 50¢

Bright pale yellow; bright yellow beard; native of Serbia; 4"; early bearded type.

SUWAROWII. (darwasean) 75¢**TENAX.** 3—\$1.25 Each 50¢

A bright lilac flower; the leaves form a dense tuft from short creeping rhizomes; 1 ft.; native of North Pacific Coast.

PSEUDACORUS. 3—\$1.25 Each 50¢

A tall, late, bright yellow; to lengthen the season.

SPURIA var. NOTHA. 3—\$1.35 Each 50¢

This resembles the Siberian Iris and this variety is a more robust type with leaves an inch wide, flowering stems 2-3 ft. and the flower is a shade of lilac; it resembles Glads and is excellent for cutting; Caucasus.

The Most Popular Iris

100 MOST POPULAR IRIS

The following selection of Iris are the 100 most popular according to the votes cast by the members of the American Iris Society. They are listed according to their popularity.

- Ola Kala.
- Blue Rhythm.
- Lady Mohr.
- Chivalry.
- Sable.
- Great Lakes.
- Blue Shimmer.
- Elmohr.
- Helen McGregor.
- Snow Flurry.
- Solid Mahogany.
- New Snow.
- Minnie Colquitt.
- Master Charles.
- Amandine.
- Wabash.
- Argus Pheasant.
- Pink Cameo.
- Ranger.
- Mulberry Rose.
- Cascade Splendor.
- Pinnacle.
- Bryce Canyon.
- Amigo.
- Cherie.
- Chantilly.
- Lady Boscawen.
- Cloth of Gold.
- Rocket.
- Pierre Menard.
- Desert Song.
- Dreamcastle.
- Azure Skies.
- Prairie Sunset.
- Tiffanja.
- Casa Morena.
- The Red Douglas.
- Extravaganza.
- Grand Canyon.
- Three Oaks.
- Lynn Langford.
- Sylvia Murray.
- The Admiral.
- Vatican Purple.
- Cloud Castle.
- Berkeley Gold.
- Spanish Peaks.
- China Maid.
- Black Forest.
- Firecracker.
- Pink Formal.
- Blue Valley.
- Katherine Fay.

REBLOOMING IRIS IN THE FALL

If you want Iris blooms in October and November, then try these beautiful varieties. They are all nice.

They give the regular crop of flowers in the spring, just ahead of the Tall Bearded Iris, and if given a rest following and then water freely, they usually produce a second crop of flowers in the fall.

AUTUMN ELF. 3—\$1.00 40¢

clear cream; F light lavender-blue edged This will make a lovely group in a border, of 5-6 plants at least; S pretty as in S; 18"; M*.

AUTUMN FLAME. 3—\$1.50 60¢

S a reddish deep copper; F velvety dark maroon; irange B; a dark variety; 40"; E*.

AUTUMN FROST. 3—\$1.00 40¢

A shining white; S faint bluish tinge; F white and shows blue more; leaves a nice green color; 36"; EM.

RE-BLOOMING IRIS COLLECTION

We will send you 18 separate varieties. All labeled, for **ONLY \$5.75**, our selection. This will make an attractive group for fall flowers.**AUTUMN HAZE.** 3—\$1.00 Each 35¢

This has a strong violet odor; light lavender and hyssop-violet; nice; 30"; E.

AUTUMN KING. 3—\$1.25 50¢

A showy blue-lavender bicolor; S a light blue with a lavender tinge; F dark blue-lavender; B real showy orange; 30"; M.

AUTUMN QUEEN. 3—\$1.25 Each 50¢

This is one of the best white re-bloomers, flowering every month in some sections with two flowers to the stem; 18"; E.

AUTUMN SURPRISE. 3—\$1.00 40¢

The flower is not large but bunches out and makes an attractive clump in the border; S frilled light blue; F darker and feathered with white; B light orange; 24"; M.

DORCAS HUTCHESON. 3—\$1.00 Each 35¢

A fine deep violet self; 22"; M.

EQUINOX. 3—\$1.25 50¢

Not a large flower but pretty in groups in the border; S glistening light blue; F dark blue; B lemon; 28"; ML.

FROST QUEEN. 3—\$1.25 50¢

S frosty white; F same as S and pencilled with yellow; B lemon; 20"; M*.

FALL BEAUTY. 3—\$1.25 50¢

A nice Rebloomer; S cool bronzy brown; F horizontal, light blue edged same color as in S; B a showy orange; foliage is very nice; 34"; E.

FROST QUEEN. 3—\$1.00 Each 35¢

A free blooming frosty white; 20"; M.

GLADSONG. 3—\$1.00 Each 35¢

An unusual variety; yellow ground plicata; 24 inches; M.

GOLDEN CATARACT. 40¢

A golden yellow; F lighter; B tangerine, showy; 20"; E*.

GOLDEN HARVEST. 3—\$1.00 Each 35¢

Olive and citron-yellow; 18"; E.

JANE KREY. 3—\$1.00 Each 35¢

A rich violet self with a red cast and a white beard; 30"; E.

JEAN SIRET. 40¢

Yellow, splashed violet; a pretty variety; 12"; E.

KANSAS INGLESIDE. 3—\$1.00 40¢

Rich toned self on the copper side; HM. 32 inches; Medium late.

KING JUNIOR. 3—\$1.00 Each 35¢

Same as Autumn King but in a deeper red; 30 inches; Medium.

LIEUT. de CHAVAGNAC. 3—\$1.00 35¢

Violet, bronze and cream; a dependable boomer; 15 inches; Early.

MARTIE EVEREST. 3—\$1.00 Each 35¢

A very choice variety in a uniform blue. 36 inches; Very early.

MRS. WALTER LAMB. 3—\$2.00 80¢

Mauve pigeon-throat standards and darker grey falls; very choice; 30 inches.

OCTOBER BLAZE. 3—\$1.25 Each 50¢

Deep dancing red; extra early; fragrant. 34 inches; Very early; fragrant.

OCTOBER OPERA. 3—\$1.00 Each 35¢

A pretty burgundy-red; fragrant; 18"; E*.

OLIVE WHITE. 3—\$1.00 Each 35¢

A beautiful deep cream color; 18"; E.

SANGREAL. 3—\$1.00 Each 35¢

Slightly frilled yellow; nice; 28"; EM*.

SEPTEMBER SKIES 3—\$1.00 Each 35¢

A dandy purple-red; fragrant; 18"; M*.

SOUTHLAND. 3—\$1.00 Each 35¢

Showy golden yellow; HM; AM; 24"; M.

ULTRA. 3—\$1.00 Each 35¢

Ultramarine-blue; pretty; HM; 25"; E.

WHITE AUTUMN KING. 3—\$1.00 35¢

snow white re-bloomer; good; 28"; EE.

HARRY E. SAIER, DIMONDALE, MICHIGAN

- Distance.
- Ormohr.
- Gudrum.
- Chamois.
- Lothario.
- Missouri.
- Garden Glory.
- Tiffany.
- Fair Elaine.
- Golden Fleece.
- Gloriole.
- Truly Yours.
- Winter Carnival.
- Pretty Quadroon.
- Golden Russet.
- Gypsy.
- Los Angeles.
- Arab Chief.
- Russet Wings.
- Treasure Island.
- Elsa Sass.
- Tobacco Road.
- Cahokia.
- Violet Symphony.
- Spun Gold.

- Moonlight Madonna.
- Sunset Blaze.
- Mexico.
- Harriett Thoreau.
- City of Lincoln.
- Zantha.
- Cordovan.
- Fantasy.
- Matterhorn.
- Louvois.
- Danube Wave.
- Golden Majesty.
- Sierra Blue.
- Indiana Night.
- Shining Waters.
- Melody Lane.
- Goldbeater.
- Golden Treasure.
- Twilight Sky.
- Vice Regal.
- Ballet Dancer.
- Ming Yellow.

Growing Plants in Wood Bands

A Porch Garden

Mrs. Madalene Modic of Pa. writes about her porch garden or jungle room, as she calls it and as it may interest others who wish to turn a porch into a miniature greenhouse, we are showing a picture of it and following are some of her remarks about handling it.

"My husband had the porch enclosed for his books, an easy chair, a place to read and relax. He had bookcases built under the windows the length of the room, 12 inches wide. 'There is room for your plants,' he said. Little did he then dream of how plants multiply and grow. Many were swapped for others, till the shelf was overflowing to a table nearby. My husband had another shelf built under the end window. By another year it, too, was overflowing, so my husband's chair was removed and more shelves were built.

The only heat comes from the living room which is heated by a furnace; the north end is always cooler than the window opposite the archway. All the shade loving plants go to the north window.

I started my porch garden in 1949 and have learned much from my plants. Some refuse to be at home, others sulk, while many are content to grow and bloom. I have the most trouble with temperature and humidity. I have little trouble with insects; prevention is the clue, by keeping the bugs away. I use Malathion this year.

I spend one hour every day with my plants; water them every other day and save rain water whenever possible. I have a shelf in the basement where I keep my supplies and do the repotting. I once raised 60 Gloxinias from seed. I sow Clarkia in September; put them into 2½ inch pots and stake, by February they are blooming. I grow Browallia, Stevia, Begonias, Petunias, Passiflower, Agapanthus, Valotta, Episcia, Plumbago, Oxalis, Lantana, and Clivia from seed.

Growing small plants in plant bands is a very handy and convenient way; especially where plants are grown for resale. Too, the small gardener who wants only a few plants, can make up a flat with 1¼ inch size which will make 45 per flat and sow just a few seeds in each band and then grow one plant in the band till it actually needs shifting to a larger size or in some cases, can be transplanted to the open ground.

There are several different types of these bands or pots on the market. The pot-type takes more space and there is always the disadvantage of the air space between them and those that are water-proof, have the disadvantage of some pots being watered too much and others not enough, there is not the drainage as in the band-type.

Nitrogen Starvation

But in the band type, these are usually made of soft wood which decays quickly, and in doing so, takes up the nitrogen from the soil in the band, thus starving the seedling when it needs the nitrogen the most. You have noticed these seedlings with their pale looks. With the cypress band, this wood actually will remain for years without decay and seedlings grown in them lose none of the nitrogen in the soil and you will have well colored plants.

For the small grower, these small sized bands made up in a flat full or 45, are ideal containers. If many seeds are started at the same time it is well to plant the slow germinators in one flat and the quick

ones in another; this will allow you to keep the flat covered with screen at least a longer period than if some seed germinated in a week, such as Sunflower, when you would have to give them head room within 10 days.

This year we have all our seed tests planted this way, most of which we will grow on in the nursery for field testing and observation. While we have tried to make the flat plantings as near alike as possible many will have to be moved before others are ready and to make the moving easy, we have placed about a half inch of coarse gravel in the bottom of each band, thinking that the band can be lifted out easily; we will have to wait and see, tho.

Ideal for Resale Purposes

Those readers who are growing plants for sale and especially perennials, should try growing in these bands, shifting to the larger size when necessary. A selection of plants can be put into flats and displayed at your sales place or as many do, sell them to those selling flowers and plants at roadside markets. One grower has small flats holding 12 bands, which he makes up in an assortment and then sells the whole dozen.

I notice that some spring sales have been for the 4 inch band; other than moving field grown stock to them, I cannot imagine how these large bands were to be used. certainly one would not want to START a plant in a large band. Ten times as many of the small size are sold to all the other sizes to gether.

Kew Soil Mixtures

SOIL MIXTURES

There are several formulas for making soil mixtures for seed pans or for potting.

The following are those known as the Kew mixtures. They have been carefully worked out and it will pay to follow them.

The Kew No. 1 Seed Mixture is:

- 6 parts sandy loam.
- 4 parts leaf-mould, (Oak best).
- 2 parts sharp sand.
- 1 part crushed flower pots.
- 1 part tufa.

and the plants germinated in this should be potted up in:

- 6 parts sandy loam.
- 2 parts leaf-mould.
- 1 part sharp sand.
- 1 part crushed pots.

Where a plant especially requires lime, this can be added; scree plants, more gravel can be added.

This mixture is used for alpinas, woodland species and those requiring excess of humus in the soil.

The Kew No. 2 Mixture is:

- 4 parts loam, free of lime.
- 4 parts sifted leaf-mould.
- 1 part peat.
- 4 parts fo sharp sand.
- 2 parts crushed pots.

and the potting soil for these plants is made up of:

- 6 parts lime-free loam.
- 4 parts leaf-mould.
- 1 part peat.
- 1 part sharp sand.
- 1 part crushed pots.

and to this mixture, bone meal, dried blood and hoof and horn meal can be added, especially for gross feeders.

The above is for lime-hating species.

The crushed pots should be very fine. the size of Radish seed. It is very valuable in the mixture because of its water holding action.

DRYING FLOWERS OF BELLS OF IRELAND

Moluccella laevis is a hardy annual, growing about 2 feet high.

It is not commonly known that its flowers

are very attractive when dried and used as "everlasting flowers". Cut the stems as soon as the dew has dried; this should be done when the flowers are full open. Hang them up in small bunches, in a dark airy room where the temperature is 60-70 degrees Far.



Mrs. Modic's Flower Room.

VELTHEIMALANT 20 YEARS OLD

J. G. Bacher of Portland, Oregon writes: "I enjoy the privilege of each year trying out new flowers and some of my plants are nearly 30 years old.

Just yesterday I photographed a Veltheimalant raised from seed planted in 1928!

I have also, for the first time, the lovely Hardenbergia in flower, also the Haemanthus natalense while H. catharinae flowered in summer time.

In the fall the evergreen Haemanthus albiflos flowered well for me as you will see from the picture enclosed.

SEDUMS FOR DRY BANKS

It is said that a basketfull of Sedum spurium rubrum, S. sexangulare and S. spurium scattered over a dry bank on a cloudy day will root and in full flower the following year.

AUSTRALIAN SEEDS

A great many Australian seeds are planted in the U.S.A. In their natural habitat, the soil is usually of a sandy nature, so it is best to mix 1/4 or 1/3 sharp sand in any heavy clay soils. It would also be kept in mind that a safe rule to follow is to provide good drainage.

PERENNIAL FLOWER SEEDS FOR SUMMER SOWING

Growers using perennial flower seed by the ounce or pound should place your orders soon that you may be sent fresh seed from the first arrivals. 1/4 Oz. at Oz. rate but no item for less than 50¢; 4 Oz. at pound rate; no item less than 50¢; all post-paid.

ORDER EARLY.

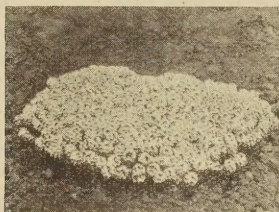
Per Oz. Per Lb.

ALYSSUM.

—saxatile. Golden yellow.....	80	8.00
—compactum. Low, compact.....	90	8.50
—argenteum. Silvery foliage.....	120	10.00

ANCHUSA.

—italica (Dropmore).....	50	5.00
—myosotidiflora. Spring fl'g.....	5.00



ALYSSUM

ANEMONE.

—coronaria St. Brigid. Extra choice double and semidouble.....	1.00	10.00
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ANTHEMIS.

—St. Johannis. Golden yellow.....	80	8.00
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AQUILEGIA.

—helenae gr. fl. Dark blue.....	1.30	14.00
—longissima. Pale yellow.....	7.00
—Mrs. Nichol's Hybrids.....	1.60
—Scott Elliott's Strain.....	2.00
—Crimson Star.....	3.00

ARABIS alpina.

—Giant flowered White.....	50	5.00
—rosea. Dwarf, upright.....	2.00
—Snow Cap. Nana.....	1.30

ASTER.

—Perennial Mixed. New lge. fl.....	1.40
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AUBRIETIA.

—eyrei.....	1.30	12.00
—leichtlini. Carmine-rose.....	1.50
—Whitewell Gem.....	1.50
—Large Flowered Hybrids.....	1.00

BAPTISIA australis.....

60 6.00

BELLIS perennis.

—Giant Fl'd Colors or Mixed.....	1.50	14.00
—chevreuse. Colors or Mixed.....	3.00	24.00
—tubulosa fl. pl. Colors or Mix.....	2.00
—lutea.....	2.00

BRIZA maxima or minima.....

50 2.00

EUPHATHMUM salicifolium.....

60 5.00

COREOPSIS.

—Mayfield Giant.....	40	2.50
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CAMPANULA.

—carpatia. Blue.....	60	5.00
—Whit e.....	60	5.00
—medium. Single colors; mixed.....	40	3.00
—Double.....	60	5.00
—calycanthema. Colors; mixed.....	90	9.00
—persicifolia. White or blue.....	1.00	22.00
—Telham Beauty.....	1.80	15.00
—pyramidalis. Blue or white.....	90	9.00

CARNATIONS.

—Giant Chabaud. All varieties.....	3.00	22.00
—Tige de Fer. Mixed.....	5.50
—Teicher's Strain. Best strain.....	4.00	30.00
—Hardy Vienna. Colors or mix.....	2.00	18.00

CERASTIUM.

—biebersteini.....	60	5.00
—tomentosum. Silvery foliage.....	60	5.00

CHEIRANTHUS.

—allioni (Siberian Wallflower).....	40	2.50
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—Orange Queen.....	50	3.00
—Golden Bedder. Pure yellow.....	50	2.50

CHRYSANTHEMUM maximum. (Shasta)

—SAIER'S EARLY. Recommended for the Florist trade, the earliest Shasta, 4 weeks earlier than any other Shasta grown from seed.....	80	7.00
—Fringed Beauty.....	50	6.00
—The Speaker.....	50	5.00
—Snowdrift. Giant flowering.....	70	7.50
—Diner's Giant Double.....	1.60	16.00

DELPHINIUM.

—Belladonna. Light blue.....	1.00	10.00
—Cliveden Beauty.....	1.00	10.00
—Bellamosum.....	1.00	10.00
—Iceberg. Pure white.....	1.00	10.00
—formosum. Dark blue.....	1.00	10.00
—Blackmore & Langdon.....	1.80	16.00
—Pacific Giant Strain. Mixed.....	3.50	30.00
—Guinevere Series.....	4.00	30.00
—Percival Series.....	4.00	30.00
—Galahad Series.....	4.00	30.00
—Blue Jay Series.....	4.00	30.00
—King Arthur Series.....	4.00	30.00
—Cameliard Series.....	4.00	30.00
—Round Table Series.....	4.00	30.00
—Blue Bird Series.....	4.00	30.00
—Black Knight Series.....	4.00	30.00
—Lancelot Series.....	4.00	30.00
—Summer Skies Series.....	4.00	30.00

DIANTHUS plumarius.

—Double and Semi-double.....	1.60	12.00
—Single Choice Mixed.....	50	3.00
—Scotch. Extra do. Mixed.....	3.00	18.00
—Double White.....	3.00	20.00

SPECIES:

—alwoodi alpinus.....	1.00	10.00
—caesius.....	1.00	10.00
—deltoides erecta.....	1.50	12.00

DIGITALIS (Foxglove).

—goxinaeflora. Mixed.....	40	4.00
—Spotted Rose.....	40	4.00
—grandiflora lutea.....	50	4.50
—lutzi.....	60	6.00
—purpurea. Colors or Mixed.....	50	3.50
—The Shirley.....	60	5.00



PACIFIC GIANT DELPHINIUMS

DORONICUM caucasicum.

—Yellow.....	4.00	40.00
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ESHINOPS ritho.....

30 2.00

ERYNGIUM.

—giganteum.....	90	9.00
—planum.....	80	8.00

GAILLARDIA GRANDIFLORA.

—Bremen. Copper scarlet.....	1.00	9.00
—Tokajer. Dark orange.....	2.00

—Burgundy. Copper scarlet.....	90	0.00
—Dazzler. Compact red-yellow.....	1.00	0.00
—Sun. Orange yellow.....	2.00
—Yellow Queen.....	90	9.00
—Tangerene. Orange red.....	1.00	9.00

GENTIANA acaulis.....

2.50 20.00

GEUM.

—coccineum. Mrs. Bradshaw.....	1.80	17.00
—Lady Stratheden.....	2.00	17.00

GYPSOPHILA PANICULATA.

—White. For bouquet.....	60	5.50
—Snowflake. Double White.....	3.50	35.00
—repens. White.....	90	7.00
—Rose.....	90	7.00

HEDYSARUM Coronarium, Red.....

50 4.00

HELENIUM hoopesi.....

55 5.00

HELLEBORUS niger.....

2.00 14.00

HESPERIS MATRONALIS.

—Violet.....	40	3.50
—White. Sweet.....	40	3.50
—nnivea. Dwarf white.....	0.50	4.00

HOLLYHOCK. Chater's Double.

—Extra Double Mixed.....	1.00	9.00
—White; Golden Yellow; Salmon; Carmine; Scarlet; Deep Scarlet; Lilac; Violet.....	1.20	10.00
(Name color wanted).....	1.20	10.00

LEONTOPODIUM alpinum.....

4.00 35.00

LIATRIS spicata.

—Purple rose.....	80	6.50
—Kobold.....	2.00	15.00

LILIUM.

—Regale.....	1.50	15.00
—White.....	4.00	32.00
—tenuifolium (Pumilum).....	3.50	27.00
—formosanum. Excelsior, white.....	4.00	32.00
—Henryi.....	4.00	11.00

LINARIA cymbalaria.....

1.80 11.00

LINUM.

—flavum.....	90	8.00
—compact Golden Yellow.....	1.50	12.00
—perenne. Blue OR white.....	50	3.00

LUPINUS polyphyllus.

—Blue; white; rose; yellow shades; shades of carmine; salmon shades; light blue shades; rich deep violet. (State color wanted).....	40	4.00
—Prize Mixture Ari Shades.....	40	3.50
—Russell's Prize Mixture.....	60	5.00

FLOWER SEEDS — From Front Cover.

LYCHNIS.		
—arkwright.	1.00	9.00
—chalcidonica.	60	3.50
—haageana hybrids.	1.20	10.00
—viscaria splendens.	40	4.00

MALVA moschata.		
—Dark rose OR white.	40	2.40

MYOSOTIS alpestris.		
—Blue Basket. Compact.	1.70	15.00
—Carmine King.	.95	9.00
—Messidor. Rich blue.	.95	9.00
—Express. Early lge. fl. blue.	1.00	9.00
—Victoria. Either white, indigo or rose.		
(State which)	1.20	14.00

MYOSOTIS oblongata.		
—Jperfecta.	1.20	9.50
—Blue Bird.	1.20	9.50

MYOSOTIS HYBRIDS.

CLASSIFIED ADVERTISEMENTS

We wish to make this classified section of special value to our readers who may have plants, roots or any other item that they wish to sell or exchange.

The charge will be 10¢ per line of 7 words, per insertion; four insertions at price of three. When offering plant material know your nursery laws.

SEEDS FOR SALE

BEAUTIFUL INDIAN ORCHIDS Himalayan Flower Bulbs, Anemone, Sternbergia, Iris, Tulips, Unusual charming seeds. G. Ghose & Co. Townsend, Darjeeling, India. 19

JOES BULLETIN, issued bi-monthly, tells you where you can buy flowering and ornamental plants, shrubs or bulbs at half of standard catalog prices. Two years \$1.00. Sample free. 1854 24th Ave. N., Seattle, 2, Washington. (22)

DAYLILY SEEDS hand pollinated from choice hybrid reds, rose, pastels. Fresh seed (mixed only) 10 for 30¢; 40 for \$1.00. Ffoulkes, 610 Bryan, Jacksonville, 2, Fla.

AMARYLLIS BULBS

AMARYLLIS GIANT HYBRIDS, mixed colors bulbs, also seedlings, offspring of Dutch and Mead strain. Prices on request. Philip Pate, Kissimmee, 14, Florida. 20

GLADIOLUS BULBS

SPRINGGLADS: Hardy Eurasian Species, fall planted, bloom in spring without thrips. List 16E free. Philip O. Buch, Rockaway, New Jersey.

PLANTS FOR SALE

HARDY VIOLETS, Mammoth White, 10 for \$1.00, 100—\$5.00; (Birdfoot) Mixed Colors, 15—\$1.00, 100—\$3.00. Dahlias a specialty. All sizes and colors; 10 largest \$2.50; 10 cutflower type \$2.50; 10 small \$2.00; lovely new \$3.00 dahlia free with each \$5.00 order. April and May delivery; add postage. SPARKMAN'S GARDEN, Rt. 1, Scottsboro, Alabama.

MARANTAS and CALATHEA, beautiful under-leaf colors; Orchid-like flowers \$1.00 and \$2.00 each. PAUL A. GIROUARD, 2710 Lane St., Palatka, Florida.

CURCUMA PETIOLATA (orchid pink ginger or queen lily) Handsome plaited foliage, flowers in mid-summer, exotic cut flowers. In North, dig and store tubers. Large dormant clumps 3-5 yrs. \$1.50 prepaid. Free list. J. D. MARION, 214 Preston St., Shreveport, La. 11

EXOTIC DAY LILLIES, hand pollinated, choice crosses reds purples, rose, bicolors, pastels. Mixed "sprouted" seedlets (tiny plants) 10 for 60¢; 25, \$1.30; Seed 50, \$1.00; 1-year seedlings (mixed) \$1.25 Doz. Seed: Giant Hybrid GLOXINIA; AFRICAN VIOLETS 50¢ and \$1.00 pkts; "Easy-do" directions. 100 African Violets, write for list. Leaves 7 for \$1.00; young plants 12 for \$4.00. Ffoulkes, 610 Bryan St., Jacksonville, 2, Fla. 12

ACTINEA HERBACEA (Lakeside Daisy) 3-1.25; 10-4.00. Gentiana Andrews alba (White Closed Kentian) 3-2.00; 10-6.00.

—Gerda Seeger.	12.00
—Sylphe.	12.00
—Isolde Kroitz.	12.00
—Annemarie Fischer.	12.00
—Ruth Fischer.	12.00
—Marga Sacher.	17.00
—Star of Love.	11.00

(Trade Packets of above, \$1.00 each)

NEPETA mussini.	1.00	9.00
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OENOTHERA.

—missouriense.	2.50	21.00
—Young. Golden yellow.	1.00	9.00

PANSY. (Swiss Giants)

—Cardinal. Rich cardinal red.	3.00	22.00
—Ullswater.	3.00	22.00
—Bergwacht. Velvety violet blue.	3.50	23.00
—Laura. Rosy lilac.	3.50	23.00
—Golden Yellow. Blotched.	3.00	22.00

Postpaid. AMERICAN PERENNIAL GARDENS. Box 37, Garden City, Mich.

ARDSIA, glossy curled crisped leaves, red Christmas berries; plants \$1.00 to \$5.00 each, postpaid. PAUL A. GIROUARD, 2710 Lane St., Palatka, Fla.

POINSETTIA ROOTED CUTTINGS, for Christmas blooming, variety of reds, pink and white, for potting or garden planting. Cultural directions. 25 for \$3.50, 50 for \$6.50, 100 for \$11.00, FOB Kissimmee. Small orders 3 for \$1.00, postpaid. PHILIP PATE, KISSIMMEE, 14, FLA. (22)

CUTTINGS: \$1.50 per dozen; house plants mixed or Begonias or Sweet Scented Geraniums, Mints, herbs, wild ferns; prepaid. Mrs. H. C. Sanborn, RFD 1, Thetford Center, Vt.

COLEUS CUTTINGS, RARE AND FANCY varieties; 50 assorted cuttings \$1.00 plus 20¢ postage. Sultana cuttings same price. A. T. Linder, 521 Nathan Hale Rd., West Palm Beach, Florida. ap

HARDY NATIVE ORCHIDS (Zone IV)

Spring and Fall Delivery, Prepaid. Each Calopogon pulchellus, Grass Pink O. .75 Cypripedium acaule, Pk. Ladyslipper .50 —arietinum, Ramshead Yel. Ladys'r 3.00 —pubescens, Common Yel. Ladys'r 1.00 —reginae, Showy Ladyslipper .100 Goodyera pubescens, Downy Rattlesnake Plantain 1.00 —repens, Creeping Rattlesnake P 1.50 Habenaria ciliaris, Yel. Fringed Or. 1.00 —fimbrata, Large Purple Fr. Orchid 1.25 —lucida, Green Fringed Orchid 1.00 —psycodes, Small Pur. Fr. Orchid 1.25 Orchis spectabilis, Showy Orchid 1.25 Pogonia ophioglossoides, Rose Pog. 1.00 Spiranthes cernua, (Nodding Ladies Tresses) 1.25

SPECIAL: 4 of a kind for price of 3. HARRY E. SAIER, DIMONDALE, MICH.

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CONCRETE GARDEN ORNAMENTS. Many new items. Frogs, Squirrels, Birds, Ducks, etc. Write for my illustrated booklet, price 10¢. WM. SPECK, 316 Herkimer, Utica, 4, N. Y.

GROW BIG FLOWERS WITH COLCHICINE, also develop unusual types entirely different. Send \$1.00 for information. Terrell Nichols, Box 125, Bowie, Texas.

MANY BEAUTIFUL THINGS are made of durable Mother-of-Pearl, Inlay, Carve, Polish, Jewelry, Thick, River, White, Pink; Instructions. One Pound \$3.50; Two lbs. \$5.25. Satisfaction or money back. Samples \$1.00. Terrell Nichols, Box 125, Bowie, Texas.

TEXAS CRETACEOUS FOSSILS and other kinds, attractive, curious, interesting, may be arranged with Cacti. Send \$1.00 for twelve fossils all different. Terrell Nichols, Box 125, Bowie, Texas.

NATIVE FERNS

These are easily transplanted and here in Michigan, we have 100% stands with fall planting. See terms on front cover.

POSTPAID. PRICE EACH.

ADIANTUM pedatum. Maidenhair.	.40
ASPLENIUM platyneuron. Ebony S.	.50
—trichomanes. Maidenhair.	.45
ATHYRIUM filixfemina. Lady F.	.45
BOTRYCHIUM virginianum. Rattlesnake Fern.	.40
CAMPTOSORUS rhizophyllus. Walking F.	
Good in dry shaded rock.	.50
CYSTOPTERIS bulbifera. Good RG.	.40
DICKSONIA punctilobula. Hay-scented F.	
Shade or open situations.	.40
DRYOPTERIS filix-mas. Male F.	.40
—goldiana. Goldie Fern.	.45
—dilata. Mountain Fancy Fern.	.40
—hexagonoptera. Winged Wood F.	.50
—linneana. Oak Fern.	.50
—marginalis. Leather Woodfern.	.40
—spinulosa. Toothed Woodfern.	.45
—thelypteris. Marsh Fern.	.40
LYGODIUM palmatum. Climbing F.	.55
ONOCLEA sensibilis. Sensitive F.	.35
OSMUNDA cinnamomea. Cinnamon F.	.45
—claytoniana. Interrupted F.	.45
—regalis. Royal Fern.	.50
PELLAEA atropurpurea. Cliff Brake.	.55
POLYPODIUM vulgare. C. Polypody.	.45
POLYSTICHUM acrostichoides. Christmas Fern. Used by florists.	.35
PTERETIS nodulosa. Ostrich Fern.	.45
PTERIDIUM aquilinum. Bracken.	.30
WOODWARDIA virginica. V. Chain F.	.40

HARDY ORCHIDS

POSTPAID. PRICE EACH.

APLECTRUM hyemale. Puttyroot.	.50
CALOPOGON pulchellus. Grass-pink O.	.50
CYPRIPEDIUM acaule. Pink Lady S.	.50
—pubescens. Yellow Ladyslipper.	.65
—spectabile. Showy Ladyslipper.	.75
HABENARIA ciliaris. Yel. Fringed O.	.50
—psycodes. Sm. Purple Orchid.	.75
ORCHIS spectabilis. Showy Or.	.45
—parviflorum. Yellow Lady S.	.75

NOTE: I can supply large clumps if desired or if you wish to make any large planting, I can quote special prices. They are not difficult to transplant to a woody soil.

SARRACENIA flava. Pitcher-plant.	.85
—purpurea.	.85
—rubra. Sweet P.	.90
SAXIFRAGA virginiana.	.40
TYPPHA latifolia. Common Cattail.	.40
VERATRUM viride. False Hellebore.	.55
VERNONIA noveboracensis. Ironweed.	.35

BOG PLANTS

ACORUS calamus. Sweet Flag.	.40
ASTER puniceus. Swamp Aster.	.35
CALTHA palustris. Marsh Marigold.	.40
CHELONE glabra. White Turtlehead.	.35
—lyoni. Pink Turtlehead.	.40
CICUTA maculata. Water Hemlock.	.35
CORNUS canadensis. Bunchberry.	.75
DIPHYLLEIA cymosa. Umbrella-leaf.	.40
EUPATORIUM purpureum. Joe-Pye-W.	.35
HELENIUM autumnale.	.35
IRIS pseudacorus. Yellow Flag.	.40
—versicolor. Blue Flag.	.40
LOBELIA cardinalis. Cardinal Fl.	.40
—syphilitica.	.40
MERTENSIA virginica. Va. Bluebells.	.35
MONARDA didyma. Oswego Beebalm.	.40
PHYLLOSTACHYS aurea. Golden Japanese Bamboo.	1.35

For TERMS for above see Front Cover.

HARRY E. SAIER Dimondale Michigan

- THE LIMITS OF THE
AVERAGE ANNUAL MINIMUM
TEMPERATURES FOR EACH ZONE**
- Zone 1 In Northern Canada
 - Zone 2 -50° to -35°
 - Zone 3 -35° to -20°
 - Zone 4 -20° to -10°
 - Zone 5 -10° to -5°
 - Zone 6 -5° to 5°
 - Zone 7 5° to 10°
 - Zone 8 10° to 20°
 - Zone 9 20° to 30°
 - Zone 10 30° to 40°

From this map determine what zone you are in. The number listed beside each variety in this catalog indicates the zone in which that variety will be hardy. Every variety that carries your zone number or a smaller number should be hardy in your area. If you want to take a chance on those rated one zone greater, there is a good possibility of success.

